

The University of Minnesota

THE COLLEGE OF MEDICINE AND SURGERY

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UNIVERSITY OF ILLINOIS

1912-1913



BULLETIN OF THE UNIVERSITY OF MINNESOTA
VOL. XV, NO. 5. JUNE 1912

Entered at the Post Office
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MINNEAPOLIS, MINN.



RELATIVE POSITION OF
UNIVERSITY OF MINNESOTA
AND
AGRICULTURAL COLLEGE



MAP OF THE CAMPUS
UNIVERSITY OF MINNESOTA
Scale 1 inch = 200 feet.

The University of Minnesota

THE COLLEGE OF MEDICINE AND SURGERY

1912-1913



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1912							1913													
JULY							JANUARY							JULY						
Su	Mo	Tu	W	Th	Fr	Sa	Su	Mo	Tu	W	Th	Fr	Sa	Su	Mo	Tu	W	Th	Fr	Sa
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7	8	9	10	11	12	13	5	6	7	8	9	10	11	6	7	8	9	10	11	12
14	15	16	17	18	19	20	12	13	14	15	16	17	18	13	14	15	16	17	18	19
21	22	23	24	25	26	27	19	20	21	22	23	24	25	20	21	22	23	24	25	26
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AUGUST							FEBRUARY							AUGUST						
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4	5	6	7	8	9	10	2	3	4	5	6	7	8	3	4	5	6	7	8	9
11	12	13	14	15	16	17	9	10	11	12	13	14	15	10	11	12	13	14	15	16
18	19	20	21	22	23	24	16	17	18	19	20	21	22	17	18	19	20	21	22	23
25	26	27	28	29	30	31	23	24	25	26	27	28	..	24	25	26	27	28	29	30
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SEPTEMBER							MARCH							SEPTEMBER						
1	2	3	4	5	6	7	..	..	..	..	..	..	1	..	1	2	3	4	5	6
8	9	10	11	12	13	14	2	3	4	5	6	7	8	7	8	9	10	11	12	13
15	16	17	18	19	20	21	9	10	11	12	13	14	15	14	15	16	17	18	19	20
22	23	24	25	26	27	28	16	17	18	19	20	21	22	21	22	23	24	25	26	27
29	30	..	..	..	..	..	23	24	25	26	27	28	29	28	29	30	..	..	..	..
..	..	..	..	..	..	..	30	31	..	..	..	..	..	..	..	..	..	..	..	..
OCTOBER							APRIL							OCTOBER						
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6	7	8	9	10	11	12	6	7	8	9	10	11	12	5	6	7	8	9	10	11
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20	21	22	23	24	25	26	20	21	22	23	24	25	26	19	20	21	22	23	24	25
27	28	29	30	31	..	..	27	28	29	30	..	..	..	26	27	28	29	30	31	..
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NOVEMBER							MAY							NOVEMBER						
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3	4	5	6	7	8	9	4	5	6	7	8	9	10	2	3	4	5	6	7	8
10	11	12	13	14	15	16	11	12	13	14	15	16	17	9	10	11	12	13	14	15
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24	25	26	27	28	29	30	25	26	27	28	29	30	31	23	24	25	26	27	28	29
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DECEMBER							JUNE							DECEMBER						
1	2	3	4	5	6	7	1	2	3	4	5	6	7	..	1	2	3	4	5	6
8	9	10	11	12	13	14	8	9	10	11	12	13	14	7	8	9	10	11	12	13
15	16	17	18	19	20	21	15	16	17	18	19	20	21	14	15	16	17	18	19	20
22	23	24	25	26	27	28	22	23	24	25	26	27	28	21	22	23	24	25	26	27
29	30	31	..	..	..	..	29	30	..	..	..	..	..	28	29	30	31	..	..	..

UNIVERSITY CALENDAR

1912-1913

The University year covers a period of thirty-eight weeks, beginning on the second Tuesday in September. Commencement Day is always the second Thursday in June.

1912

September	3	Tuesday	Registration closes except for new students
September	3-10	Week	Fees payable except for new students
September	10-16	Week	Examinations for removal of conditions, registration of new students, and payment of fees
September	11-17	Week	
September	18	Wednesday	First semester begins
November	27	Wednesday	Thanksgiving recess begins 6:00 p. m.
December	2	Monday	Thanksgiving recess ends 8:00 a. m.
December	20	Friday	Christmas vacation begins 6:00 p. m.

1913

January	7	Tuesday	Christmas vacation ends 8:00 a. m.
January	21	Tuesday	Registration for second semester closes
January	27	Monday	Final examinations begin
January	28	Tuesday	Payment of fees for second semester closes
February	5	Wednesday	Second semester begins
February	12	Wednesday	Lincoln's Birthday: a holiday
February	13	Thursday	First semester class reports due
February	22	Saturday	Washington's Birthday: a holiday
March	19	Wednesday	Easter recess begins 6:00 p. m.
March	27	Thursday	Easter recess ends 8:00 a. m.
May	30	Friday	Decoration Day: a holiday
June	2	Monday	Final examinations begin
June	7	Saturday	Second semester closes
June	8	Sunday	Baccalaureate service
June	9	Monday	Senior class day exercises
June	11	Wednesday	Alumni Day
June	12	Thursday	Forty-first Annual Commencement
June	13	Friday	Summer vacation begins

The University year for 1913-14 will begin Tuesday, September 9.

*Schedule of Examinations for Advanced Standing and
to Remove Conditions*

Tuesday to Saturday, September 10-14, 1912

9:00 a. m.

2:00 p. m.

THIRD (FRESHMAN) YEAR COURSES

Tuesday	Anatomy (written)	Anatomy (practical)
Thursday	Anatomy (written)	Anatomy (practical)
Saturday	Physiology	Chemistry, organic; toxicology, water and food analysis

FOURTH (SOPHOMORE) YEAR COURSES

Tuesday	General Pathology	General Bacteriology
Wednesday	Special Pathology & Bacteriology (practical)	Special Pathology & Bacteriology (written)
Thursday	Anatomy	Pharmacology
Friday	Physiology	Anatomy
Saturday	Medical Case Taking Physical Diagnosis	Anatomy

FIFTH (JUNIOR) YEAR COURSES

Tuesday	Obstetrics	Practice of Medicine
	Gynecology	
Wednesday	Principles of Surgery	Surgical Anatomy
	Practical Pharmacy	
Thursday	Surgery	Pharmacology
Friday	Pediatrics	Surgical Pathology
	Operative Surgery	Pathology of Nervous System
Saturday	Pathology of Tumors	Clinical Pathology

SIXTH (SENIOR) YEAR COURSES

Tuesday	Obstetrics & Gynecology	Practice of Medicine
Wednesday	Surgery	Hygiene
Thursday	Eye and Ear	Nose and Throat
Friday	Mental and Nervous	Therapeutic Conference

Examination for advanced standing and to remove conditions in all elective subjects, and all subjects not listed above, will be held by appointment during September 10th to 14th. In all subjects not specifically scheduled, condition examinations must be arranged for not later than September 10th.

Students must register for examinations in Dean's office at least twenty-four hours prior to any examination they may wish to take. See also pages 20 and 21 for regulation concerning unremoved conditions, etc.

THE UNIVERSITY

THE UNIVERSITY OF MINNESOTA comprises the following named schools, colleges, and departments:

THE COLLEGE OF SCIENCE, LITERATURE, AND THE ARTS

THE COLLEGE OF ENGINEERING AND THE MECHANIC ARTS

THE DEPARTMENT OF AGRICULTURE, including—

THE COLLEGE OF AGRICULTURE

THE COLLEGE OF FORESTRY, including—

FOREST EXPERIMENT STATIONS AT ITASCA AND CLOQUET

THE SCHOOL OF AGRICULTURE including—

THE DAIRY SCHOOL

THE SHORT COURSE FOR FARMERS

TEACHERS' SUMMER TRAINING SCHOOL

THE SCHOOL OF TRACTION ENGINEERING

THE SCHOOL OF AGRICULTURE, CROOKSTON

THE SCHOOL OF AGRICULTURE, MORRIS

THE EXPERIMENT STATIONS, including—

THE MAIN STATION AT ST. ANTHONY PARK

THE SUB-STATION AT CROOKSTON

THE SUB-STATION AT GRAND RAPIDS

THE SUB-STATION AT DULUTH

THE SUB-STATION AT WASECA

THE SUB-STATION AT ZUMBRA HEIGHTS

AGRICULTURAL EXTENSION

BUREAU OF RESEARCH IN AGRICULTURAL ECONOMICS

THE LAW SCHOOL

THE COLLEGE OF MEDICINE AND SURGERY, including—

THE SCHOOL FOR NURSES

THE COLLEGE OF DENTISTRY

THE COLLEGE OF PHARMACY

THE SCHOOL OF MINES, including—

MINNESOTA SCHOOL OF MINES EXPERIMENT STATION

THE SCHOOL OF ANALYTICAL AND APPLIED CHEMISTRY

THE COLLEGE OF EDUCATION

THE GRADUATE SCHOOL

THE GEOLOGICAL AND NATURAL HISTORY SURVEY

THE BOARD OF REGENTS

The Hon. JOHN LIND, Minneapolis, President of the Board	-	-	1914
GEORGE EDGAR VINCENT, Ph.D., LL.D., Minneapolis	-	-	<i>Ex-Officio</i>
The President of the University			
The Hon. ADOLPH O. EBERHART, Mankato	-	-	<i>Ex-Officio</i>
The Governor of the State			
The Hon. C. G. SCHULZ, St. Paul	-	-	<i>Ex-Officio</i>
The State Superintendent of Public Instruction			
The Hon. W. J. MAYO, Rochester	-	-	1913
The Hon. MILTON M. WILLIAMS, Little Falls	-	-	1913
The Hon. HENRY B. HOVLAND, Duluth	-	-	1914
The Hon. A. E. RICE, Willmar	-	-	1915
The Hon. CHARLES L. SOMMERS, St. Paul	-	-	1915
The Hon. B. F. NELSON, Minneapolis	-	-	1916
The Hon. PIERCE BUTLER, St. Paul	-	-	1916
The Hon. CHARLES A. SMITH, Minneapolis	-	-	1916

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FREDERICK J. WULLING, Ph.D., LL.M., Dean of the College of Pharmacy
WILLIAM R. APPLEBY, M.A., Dean of the School of Mines
GEORGE B. FRANKFORTER, M.A., Ph.D., Dean of the School of Chemistry
GEORGE F. JAMES, Ph.D., Dean of the College of Education
HENRY T. EDDY, C.E., Ph.D., LL.D., Dean of the Graduate School
ADA L. COMSTOCK, M.A., Dean of Women

THE DEPARTMENT OF MEDICINE

The Department of Medicine includes the following colleges:

The College of Medicine and Surgery

FRANK F. WESBROOK, M.A., M.D., C.M., Dean

JOHN B. JOHNSTON, Ph.D., Secretary

THOMAS G. LEE, B.S., M.D., Librarian, Department of Medicine

The College of Dentistry

ALFRED OWRE, B.A., M.D., C.M., D.M.D., Dean

The College of Pharmacy

FREDERICK J. WULLING, Phm.D., LL.M., Dean

Each college is self-governed as to its internal affairs, having its own faculty and an independent curriculum. The laboratories and staff of the College of Medicine and Surgery provide instruction for all students in each of the three colleges, as required, in the following branches:

Gross and microscopic Anatomy, Physiology, Chemistry, Pathology, Bacteriology and Pharmacology.

The College of Medicine and Surgery of the University is now the only medical school in the State of Minnesota.

During the summer of 1912 two new buildings, known as the Institute of Anatomy and the new Millard Hall, will be completed for the use of certain departments of the College of Medicine and Surgery.

THE COLLEGE OF MEDICINE AND SURGERY

FACULTY

- GEORGE EDGAR VINCENT, Ph.D., LL.D., President 1005 5th St. S. E.
CYRUS NORTHROP, LL.D., President Emeritus 519 10th Ave. S. E.
AMOS W. ABBOTT, M.D., Emeritus Professor of Gynecology 21 S. 10th St.
EVERTON J. ABBOTT, B.A., M.D., Emeritus Professor of Clinical Medicine 425 Dayton Ave., St. Paul
JOHN W. BELL, M.D., Emeritus Professor of Clinical Medicine and Physical Diagnosis 1036 Andrus Bldg.
CHARLES A. WHEATON, M.D., Emeritus Professor of Surgery 329 Summit Ave., St. Paul

EXECUTIVE FACULTY

- FRANK F. WESBROOK, M.A., M.D., C.M., Dean and Professor and Director of the Department of Pathology and Bacteriology 906 5th St. S. E.
RICHARD OLDING BEARD, M.D., Professor of Physiology and Director of the Department of Physiology and Pharmacology The Virginia
GEORGE B. FRANKFORTER, M.A., Ph.D., Professor and Director of the Department of Chemistry 525 E. River Road
CHARLES LYMAN GREENE, M.D., Professor and Chief of the Department of Medicine 421 Summit Ave., St. Paul
THOMAS G. LEE, B.S., M.D., Professor and Director of the Department of Anatomy, and Librarian, Department of Medicine 509 E. River Road
JAMES E. MOORE, M.D., Professor and Chief of the Department of Surgery 616 Syndicate Bldg.
C. EUGENE RIGGS, M.A., M.D., Professor and Chief of the Department of Mental and Nervous Diseases 10 Crocus Hill, St. Paul
PARKS RITCHIE, M.D., Professor and Chief of the Department of Obstetrics and Gynecology 910 Lowry Bldg., St. Paul
FRANK C. TODD, M.D., Professor and Chief of the Department of Eye, Ear, Nose, and Throat 506 Donaldson Bldg.
-
- LOUIS B. BALDWIN, M.D., Superintendent, University Hospitals 304 State St. S. E.
LOUISE M. POWELL, R.N., Superintendent of the School for Nurses 417 Delaware St. S. E.

GENERAL FACULTY

- E. T. BELL, B.S., M.D., Assistant Professor of Pathology and Bacteriology
222 Harvard St. S.E.
- EDGAR D. BROWN, Phm.D., M.D., Professor of Materia Medica and Pharmacology
3525 3d Ave. S.
- FRANK E. BURCH, M.D., Assistant Professor of Ophthalmology and Otology
930 Lowry Bldg., St. Paul
- ABRAHAM B. CATES, M.A., M.D., Professor of Obstetrics
413 Pillsbury Bldg.
- JAMES T. CHRISTISON, M.D., Professor of Pediatrics
535 Lowry Bldg., St. Paul
- ALEXANDER R. COLVIN, M.D., Clinical Professor of Surgery
342 Lowry Bldg., St. Paul
- J. FRANK CORBETT, B.S., M.D., Associate Professor of Experimental Surgery
2446 Park Ave.
- JOHN GROSVENOR CROSS, B.S., M.S., M.D., Clinical Professor of Medicine
910 Donaldson Bldg.
- WARREN A. DENNIS, B.S., M.D., Clinical Professor of Surgery
942 Lowry Bldg., St. Paul
- IRA H. DERBY, Ph.D., Assistant Professor of Chemistry
2157 Commonwealth Ave., St. Paul
- ARTHUR W. DUNNING, M.D., Clinical Professor of Nervous and Mental Diseases
803 Lowry Bldg., St. Paul
- FREDERICK A. DUNSMOOR, M.D., Professor of Clinical Surgery
100 Andrus Bldg.
- CHARLES A. ERDMANN, M.D., Professor of Gross and Applied Anatomy
612 9th Ave. S. E.
- BURNSIDE FOSTER, B.A., M.D., Professor of Dermatology and Syphilology and Lecturer upon the History of Medicine
821 Lowry Bldg., St. Paul
- ROBERT B. GIBSON, Ph.B., Ph.D., Assistant Professor of Physiologic Chemistry
222 Harvard St. S. E.
- ARTHUR J. GILLETTE, M.D., Professor of Orthopedic Surgery
Seven Corners, St. Paul
- JAMES GILFILLAN, M.D., Clinical Professor of Medicine
910 Lowry Bldg., St. Paul
- EVERHART P. HARDING, M.S., Ph.D., Assistant Professor of Chemistry
1316 7th St. S. E.
- GEORGE D. HEAD, B.S., M.D., Associate Professor of Medicine
503 Donaldson Bldg.
- ALBERT C. HEATH, M.D., Clinical Professor of Rhinology and Laryngology
339 Lowry Bldg., St. Paul
- HIBBERT W. HILL, M.D., Assistant Professor of Bacteriology
Minnesota State Board of Health, Minneapolis
- JOHN B. JOHNSTON, Ph.D., Professor of Comparative Neurology and Secretary of the Executive Faculty
715 Fulton St. S. E.

- WILLIAM A. JONES, M.D., Professor of Nervous and Mental Diseases
513 Pillsbury Bldg.
- ARTHUR A. LAW, M.D., Clinical Professor of Surgery
413 Pillsbury Bldg.
- FREDERICK LEAVITT, M.D., Clinical Professor of Obstetrics and Gynecology, and Clerk of Clinics
910 Lowry Bldg., St. Paul
- JENNINGS C. LITZENBERG, B.S., M.D., Associate Professor of Gynecology and Obstetrics, and Chief of Staff, Out-Patient Department
910 Donaldson Bldg.
- ARCHIBALD MACLAREN, B.S., M.D., Clinical Professor of Surgery
412 Holly Ave., St. Paul
- JOHN S. MACNIE, B.A., M.D., Clinical Professor of Ophthalmology and Otolaryngology
506 Donaldson Bldg.
- ARTHUR T. MANN, B.S., M.D., Clinical Professor of Surgery and Clerk of Clinics
910 Donaldson Bldg.
- ROBERT H. MULLIN, B.A., M.B., Associate Professor of Pathology and Bacteriology
1023 University Ave. S. E.
- WILLIAM R. MURRAY, Ph.B., M.D., Professor of Rhinology and Laryngology
510 Pillsbury Bldg.
- LOUIS A. NIPPERT, M.D., Clinical Professor of Medicine
307 Reid Corner
- HENRY J. O'BRIEN, M.D., Clinical Professor of Surgery
541 Lowry Bldg., St. Paul
- ELMER H. PARKER, B.S., M.D., Assistant Professor of Rhinology and Laryngology
2401 Sheridan Ave. S.
- WALTER R. RAMSEY, M.D., Clinical Professor of Pediatrics
214 S. Grotto St., St. Paul
- SOREN P. REES, B.S., M.D., Clinical Professor of Medicine
1034 Andrus Bldg.
- THOMAS S. ROBERTS, M.D., Clinical Professor of Pediatrics
1603 4th Ave. S.
- HAROLD E. ROBERTSON, B.A., M.D., Associate Professor of Pathology and Bacteriology and Pathologist to the University Hospitals
508 Essex St. S. E.
- JOHN T. ROGERS, M.D., Clinical Professor of Surgery
342 Lowry Bldg., St. Paul
- JOHN L. ROTHROCK, M.A., M.D., Clinical Professor of Gynecology
514 Lowry Bldg., St. Paul
- RICHARD E. SCAMMON, Ph.D., Assistant Professor of Anatomy
112 Church St. S. E.
- FREDERICK H. SCOTT, Ph.D., M.B., D.Sc., Assistant Professor of Physiology
1023 University Ave. S. E.
- JULIUS PARKER SEDGWICK, B.Sc., M.D., Assistant Research Professor in Physiologic Chemistry and Clinical Instructor in Pediatrics
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514 Lowry Bldg., St. Paul
- WALTER D. SHELDEN, B.S., M.D., Clinical Professor of Medicine
3233 Irving Ave. S.

- ANTON SHIMONEK, M.D., Clinical Professor of Surgery
514 Lowry Bldg., St. Paul
- HALDOR SNEVE, M.D., Clinical Professor of Nervous and Mental Diseases
814 Lowry Bldg., St. Paul
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821 Lowry Bldg., St. Paul
- HORATIO B. SWEETSER, M.D., Clinical Professor of Surgery
707 Masonic Temple
- *MAX P. VANDER HORCK, M.D., Professor of Diseases of the Skin and
Genito-Urinary Organs
- S. MARX WHITE, B.S., M.D., Associate Professor of Medicine
910 Donaldson Bldg.
- M. RUSSELL WILCOX, M.D., Assistant Professor of Physiology
802 Donaldson Bldg.
- LOUIS B. WILSON, M.D., Assistant Professor of Clinical Pathology
830 W. College St., Rochester
- FRANK R. WRIGHT, M.D., Clinical Professor of Genito-Urinary Diseases
707 Donaldson Bldg.
-

- FRED L. ADAIR, B.S., M.D., Instructor in Obstetrics and Gynecology
820 Donaldson Bldg.
- WILLIAM F. ALLEN, M.A., Instructor in Histology and Embryology
92 N. 17th St.
- CHARLES R. BALL, B.A., M.D., Clinical Instructor in Nervous and Mental
Diseases, 942 Lowry Bldg., St. Paul
- GEORGE C. BARTON, M.D., Clinical Instructor in Gynecology
1028 Andrus Bldg.
- ARTHUR E. BENJAMIN, M.D., Clinical Instructor in Gynecology
1020 Donaldson Bldg.
- FRANK S. BISSELL, M.D., Clinical Instructor in Medicine and Radi-
ographer, University Hospitals 4412 Lake Harriet Blvd.
- CHARLES H. BRADLEY, M.D., Clinical Instructor in Medicine
1016 Donaldson Bldg.
- JOHN B. BRIMHALL, M.D., Clinical Instructor in Orthopedic Surgery
303 Moore Blk., St. Paul
- WILLIAM H. CONDIT, B.S., M.D., Clinical Instructor in Therapeutics
636 Syndicate Bldg.
- HENRY WIREMAN COOK, B.A., M.D., Instructor in Clinical Medicine
N. W. Nat'l. Life Ins. Bldg.
- PAUL B. COOK, M.D., Instructor in Genito-Urinary Diseases
710 Lowry Bldg., St. Paul

*Deceased.

- LESLIE O. DART, M.D., Clinical Instructor in Pediatrics
304 Masonic Temple
- CHARLES F. DIGHT, M.D., Lecturer in Pharmacology and Materia Medica
4818 39th Ave. S.
- CHARLES R. DRAKE, M.D., Assistant Pathologist, University Hospitals
- ROBERT E. FARR, M.D., Clinical Instructor in Surgery 301 Reid Corner
- EMIL S. GEIST, M.D., Clinical Instructor in Orthopedic Surgery
820 Donaldson Bldg.
- *JUDD GOODRICH, M.D., Clinical Instructor in Surgery
- ADDISON GULICK, M.A., Ph.D., Instructor in Physiologic Chemistry
524 12th Ave. S. E.
- ARTHUR S. HAMILTON, B.S., M.D., Instructor in Pathology of the Nervous
System and Clinical Instructor in Mental and Nervous Diseases
513 Pillsbury Bldg.
- EARLE R. HARE, B.S., M.D., Clinical Instructor in Surgery
505 Donaldson Bldg.
- WILLIAM A. HILTON, Ph.D., Instructor in Histology and Embryology
113 Church St. S. E.
- PEDER A. HOFF, M.D., Clinical Instructor in Medicine
939 Lowry Bldg., St. Paul
- JOHN E. HYNES, M.D., Clinical Instructor in Medicine
3349 University Ave. S. E.
- WILLIAM C. JOHNSON, B.A., M.D., Demonstrator in Pathology and Bac-
teriology 827 University Ave. S. E.
- HERBERT W. JONES, M.D., Clinical Instructor in Nervous and Mental
Diseases 2418 W. 22d St.
- WINFORD P. LARSON, M.D., Demonstrator in Pathology and Bacteriology
614 9th Ave. S. E.
- C. NAUMANN MCCLOUD, M.D., Clinical Instructor in Pediatrics
524 Lowry Bldg., St. Paul
- FLETCHER O. MACFARLAND, B.S., M.D., Instructor in Physiology
417 Union St. S. E.
- JENNETTE M. McLAREN, M.D., Clinical Instructor in Obstetrics
803 Lowry Bldg., St. Paul
- GUSTAV A. MAGNUSSON, M.D., Demonstrator in Pathology and Bacteri-
ology
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Moore Blk., St. Paul
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Otology 2511 Washburn Ave. S.
- LOUIS A. NELSON, M.D., Clinical Instructor in Ophthalmology and
Otology 734 Lowry Bldg., St. Paul
- HENRY T. NIPPERT, M.D., Clinical Instructor in Medicine
339 Lowry Bldg., St. Paul
- OLOF A. OLSON, M.D., Clinical Instructor in Surgery 221 Cedar Ave.
- OSCAR OWRE, M.D., C.M., Clinical Instructor in Genito-Urinary Diseases
707 Masonic Temple

- FREDERICK H. POPPE, B.A., M.D., Clinical Instructor in Surgery
702 Donaldson Bldg.
- CHARLES A. REED, B.S., M.D., Clinical Instructor in Orthopedic Surgery
310 Pillsbury Bldg.
- ERNEST T. F. RICHARDS, M.D., C.M., Clinical Instructor in Medicine—
914 Lowry Bldg., St. Paul
- HARRY P. RITCHIE, Ph.B., M.D., Clinical Instructor in Surgery
914 Lowry Bldg., St. Paul
- FREDERIC W. SCHLUTZ, B.A., M.D., Clinical Instructor in Pediatrics
and Research Associate in Physiologic Chemistry
802 Donaldson Bldg.
- CHARLES N. SPRATT, B.S., M.D., Clinical Instructor in Ophthalmology
and Otology,
900 Nicollet Ave.
- ARTHUR C. STRACHAUER, M.D., Clinical Instructor in Surgery
616 Syndicate Bldg.
- EUGENE S. STROUT, M.D., Clinical Instructor in Ophthalmology and
Otology
910 Donaldson Bldg.
- THOMAS W. STUMM, M.D., Clinical Instructor in Medicine
744 Lowry Bldg., St. Paul
- SAMUEL E. SWEITZER, M.D., Clinical Instructor in Dermatology and
Genito-Urinary Diseases
343 Andrus Bldg.
- HENRY L. ULRICH, B.S., M.D., Instructor in Clinical Medicine
310 Pillsbury Bldg.
- H. JOURNEY WELLES, M.D., Clinical Instructor in Ophthalmology and
Otology
306 Masonic Temple
- ARCHA WILCOX, M.D., Clinical Instructor in Surgery
204 Donaldson Bldg.
- HENRY L. WILLIAMS, M.D., Instructor in Gynecology
616 Donaldson Bldg.
- CHARLES B. WRIGHT, B.A., M.D., Clinical Instructor in Pediatrics
636 Syndicate Bldg.
-
- JOHN M. ARMSTRONG, M.D., Clinical Assistant in Genito-Urinary Diseases
409 Lowry Bldg., St. Paul
- SEILER J. ASPELUND, B.A., M.D., Clinical Assistant in Obstetrics and
Gynecology
315 Masonic Temple
- WILLIAM H. AURAND, M.D., Clinical Assistant in Medicine
425 Oak St. S. E.
- ERNEST L. BAKER, M.D., Clinical Assistant in Medicine
503 Donaldson Bldg.
- WILLIAM D. BEADIE, M.D., C.M., Clinical Assistant in Pediatrics
334 Lowry Bldg., St. Paul
- HALLWARD M. BLEGEN, B.A., M.D., Clinical Assistant in Gynecology
1525 E. Franklin Ave.
- ELWYN R. BRAY, B.A., M.D., Clinical Assistant in Ophthalmology and
Otology
69 N. Milton, St. Paul
- LEVERETT D. BRISTOL, B.S., M.D., Clinical Assistant in Medicine
923 Lowry Bldg., St. Paul

- JOHN C. BROWN, B.A., M.D., Clinical Assistant in Medicine
5 Barton Ave. S. E.
- PAUL F. BROWN, B.A., M.D., Clinical Assistant in Surgery
3733 Nicollet Ave.
- OLIVER R. BRYANT, M.D., Clinical Assistant in Medicine
3160 Chicago Ave.
- JOHN BUTLER, M.D., Clinical Assistant in Dermatology
403 Pillsbury Bldg.
- HARRY E. CANFIELD, M.D., Clinical Assistant in Ophthalmology and
Otology
2102 2d Ave. S.
- CHARLES D. FREEMAN, M.D., Clinical Assistant in Dermatology and
Venereal Diseases
642 Lowry Bldg., St. Paul
- JAMES W. GEORGE, B.S., M.D., Clinical Assistant in Obstetrics
412 Reid Corner
- EDWARD V. GOLTZ, M.D., Clinical Assistant in Rhinology and Laryn-
gology
394 Selby Ave., St. Paul
- EUGENE K. GREEN, B.A., M.D., Associate in Anatomy
307 Reid Corner
- JAMES F. HAMMOND, M.D., C.M., Clinical Assistant in Pediatrics
334 Lowry Bldg., St. Paul
- EDGAR J. HUENEKENS, B.A., M.D., Clinical Assistant in Medicine
1037 Andrus Bldg.
- HARRY G. IRVINE, M.D., Clinical Assistant in Dermatology
601 Syndicate Bldg.
- E. MENDELSSOHN JONES, M.D., Clinical Assistant in Surgery
541 Lowry Bldg., St. Paul
- ANTOINE A. LAURENT, M.D., Clinical Assistant in Diseases of Children
203 Donaldson Bldg.
- RAE T. LA VAHE, B.A., M.D., Temporary Assistant in Pediatrics
203 Donaldson Bldg.
- JARL FERDINAND LEMSTROM, B.S., M.D., Clinical Assistant in Medicine
2117 4th Ave. N.
- ADOLPH E. LOBERG, M.D., Clinical Assistant in Nervous and Mental
Diseases
221 Cedar Ave.
- HENRY LYSNE, B.S., M.D., Clinical Assistant in Medicine
700 20th Ave. N.
- EDWARD MOREN, M.D., Clinical Assistant in Medicine
307 Donaldson Bldg.
- FREDERICK A. OLSON, B.A., M.D., Research Assistant in Medicine
914 Lowry Bldg., St. Paul
- REUBEN M. PEDERSON, B.A., M.D., Temporary Assistant in Genito-
Urinary Diseases
2901 Washington Ave. N.
- CHELSEA C. PRATT, M.D., Clinical Assistant in Medicine
915 E. River Road
- FRED J. PRATT, M.D., Clinical Assistant in Ophthalmology and Otology
328 Central Ave.
- LOUIS SYDNEY B. ROBINSON, B.A., M.D., Clinical Assistant in Obstetrics
744 University Ave., St. Paul

- CHARLES L. RODGERS, M.D., Clinical Assistant in Obstetrics
59 Lyndale Ave. N.
- IVAR SIVERTSEN, M.D., Clinical Instructor in Gynecology
1028 Andrus Bldg.
- ANTON G. WETHALL, B.S., M.D., Clinical Assistant in Genito-Urinary
Diseases 325 Cedar Ave.
- ROBERT WILLIAMS, B.A., M.D., Clinical Assistant in Medicine
3408 Chicago Ave.
- CARL A. WITHAM, M.D., Clinical Assistant in Rhinology and Laryn-
gology 3128 Bloomington Ave.
- DOUGLAS F. WOOD, M.D., C.M., Clinical Assistant in Rhinology and
Laryngology 307 Donaldson Bldg.

GENERAL INFORMATION

REQUIREMENTS FOR ADMISSION

Students entering the College of Medicine and Surgery must have received the bachelor's degree in arts or science or must register in one of the combined courses described below so as to secure the bachelor's degree before graduating in Medicine.

All students are required to present to the University Registrar evidence of at least two years' work in a recognized college of science and arts, which must include the following subjects:

Rhetoric,	6 credits
Physics.....	8 credits
General Inorganic Chemistry.....	6 credits
Qualitative Analysis.....	6 credits
Biology (preferably Zoology).....	6 credits
Language, two years of High School Latin and a reading knowledge of either German or French.	

One *credit* means one recitation hour per week for one semester. A single credit hour in a laboratory subject requires two or more hours of consecutive work.

The following courses given in the College of Science, Literature, and the Arts of the University of Minnesota, or their equivalent in other approved colleges, will meet these requirements.

Rhetoric, Course 1.

Physics, Courses 1, 2, 3, and 4.

Chemistry, Courses 1 or 2, and 3.

Animal Biology, Course 1; or Botany, Course 1.

German or French. To secure a reading knowledge will ordinarily require one or two years of college work, dependent upon the previous High School training.

Electives, to make up 60 credits (62 credits until September, 1914) in the College of Science, Literature, and the Arts. At least one course must be elected from the social science group of electives (Group III) in that College.

Candidates who present two or more years of collegiate work and are deficient in any of the subjects named will be required to pass examinations, conducted by the College of Science, Literature, and the Arts, upon such subjects as may be lacking.

The University Summer School offers opportunities for making up deficiencies in preparation.

MATRICULATION AND REGISTRATION

Students who are entering the College of Medicine and Surgery for the first time will go first to the University Registrar and present their entrance qualifications.

The registration of all students consists of three parts and should be carried out in the following order:

1. Present registration slip to the Registrar and secure a statement of fees.
 2. Present this statement at once to the Cashier and pay fees.
 3. Report to the Dean at once for final classification and registration.
- Students must follow this order and complete registration as promptly as possible in order to secure tickets for entrance to the various courses.

Students having matriculated in previous years are required to indicate registration on proper blank not later than September 3d. Fees must be paid in full on or before September 10th.

For the second semester, registration must be indicated on or before January 21st, and fees paid on or before January 28th.

A penalty fee of one dollar must be paid by all students who register or pay fees after the prescribed time. After the day previous to that on which classes begin the penalty for delay increases at the rate of twenty-five cents per day. The Registrar will send proper blanks to all students who were in college the previous year, on or before August 20th. Students who fail to receive blanks at that date should call for them.

Registration is not complete until all conditions are removed.

TUITION AND FEES

The annual tuition fee in the College of Medicine and Surgery is \$150. Students who have entered prior to September, 1910, will pay an annual tuition fee of \$100 until they have completed the course of study.

No tuition fee is charged for the fifth year of work recently added to the course.

One-half of the annual fee is payable at the time of registration at the beginning of each semester. If the applicant fails to pass the entrance examination, his fees will be returned by the Cashier. Absence or failure to continue study will not entitle the student to return of fees, except in cases of special hardship, when application may be made to the President of the University.

A student who takes advanced standing will not receive any credit therefor upon his annual fees.

A hospital fee of \$3.00 will be paid by junior and senior students.

A fee of one dollar is charged for examination to remove a condition.

Special examinations may be ordered by the Faculty under exceptional circumstances for which a fee of five dollars for each subject must be paid to the University Cashier.

A student repeating work by reason of failure must pay the usual fee connected with that course.

Special undergraduate students will pay the Cashier fees for the studies they elect to pursue proportional to the total fees of the year in which such studies are placed.

Graduate students will pay an admission fee of \$10.00 which will entitle them to attend any lectures they may desire in regular courses.

Every student in this college is assigned at the time of registration a University post-office box, for which a rental charge of 50 cents per year is made. Students are held responsible for the receipt of official notices sent through the University post-office.

A deposit of five dollars will be made with the University cashier each year, by every student, at the time of enrollment, as a caution fee. This fee is intended to cover the cost of unnecessary damage in the college buildings and of breakage and loss of laboratory apparatus and materials, penalties for late registration or late payment of fees, condition examinations, and rental of post-office box. It will be returned to the student at the close of each year, minus the charges above mentioned, and the cost of articles assigned to him, which are not returned in good condition, or of damage to college property for which he is individually responsible. If responsibility for such damage cannot be individually fixed, a pro rata charge upon all students concerned will be made.

EXAMINATIONS

Final examination in every subject is held at the end of the semester or quarter in which the subject is closed. Opportunity is offered to remove conditions only at the opening of the school year in September.

Students must register for examinations in the Dean's office at least twenty-four hours prior to any special or condition examination they may wish to take.

STANDINGS AND ADVANCEMENT

The final standing of any student in a given subject shall be determined as the result of his practical work (laboratory or clinical), recitations, and oral or written examinations. All of these factors will be taken into consideration in determining the final grade.

Students' final standings are determined at the end of each year by a conference of the heads of the college departments.

Students' standings shall be reported to and obtained from the Dean's office only.

Students shall be reported as passed, incomplete, conditioned, or failed.

Students will not be permitted to substitute private work in any branch for the regular college courses.

Students with entrance or other conditions must remove them before the opening of the succeeding college year.

Habitual absence without satisfactory excuse, continued indifference to study, or persistently poor scholarship will subject the student to temporary or indefinite suspension.

CONDITIONS

Conditions can be removed only at the beginning of the school year in September. A condition not removed in regular course becomes a failure and the work must be repeated in class.

A student who is found in faculty conference to be deficient in the major portion of his year's work will be required to repeat the year's work in full.

ADVANCED STANDING

Students from other recognized medical colleges applying for admission to the fourth, fifth, and sixth year classes will be required to present official credentials and other satisfactory evidence of time spent in medical studies, to satisfy all admission requirements, and to pass examinations in the branches already taken by the class they seek to enter, but any student may be excused from such examinations if the instruction which he has received is considered satisfactory by the head of the corresponding department in this college.

Students are not given time credit for work done outside a medical school. However, when a student presents satisfactory evidence of good work done elsewhere, he may be given subject credit for such work and be permitted to take optional or advanced work in the branches and for the time in which he has received subject credit. It is consequently of considerable advantage to a student to be able to present subject credits.

No condition of advanced standing will entitle the student to take two years of any graded study at the same time.

CLINICAL SERVICE

The attendance of students at all clinics will be required, and periodical examinations upon series of clinics attended will be given.

Senior students shall be assigned by the Dean's office for stated periods, to act as clinical clerks in the University Hospital.

Clinical clerks shall be under the immediate supervision of the Senior Interne, and shall be assigned their respective duties by him.

They shall attend the Hospital between the hours of 2:30 and 3:30 p. m. on Monday, Tuesday, Wednesday, and Friday, and shall be excused from attendance on lectures in medicine during the period of their assignment, and they shall also attend on the same days between the hours of 3:30 and 5:30, except when the schedule calls for their attendance elsewhere.

Their duties shall be at the direction of the Senior Interne.

- (a) To record results of physical examinations as dictated by the attending physicians.
- (b) To make and record examinations in the laboratory.
- (c) To make rounds with the attending physicians.

No examinations of patients are to be made except at the express direction of the attending physicians.

Senior students are assigned to the surgical wards of the University Hospital on Mondays, Tuesdays, Wednesdays, and Fridays, between the hours of 10 and 11 a. m. for bedside clinics. Under the direction of the Junior Surgical Staff they are required to examine patients and make the laboratory examinations necessary to arrive at a diagnosis. Without access to the regular hospital records, they are required to write out a complete history of the cases assigned them, including their laboratory findings, diagnosis, and suggestions for treatment. They are then quizzed upon these papers by the Junior Staff, and the papers are filed in the office of the Chief of the Department and make a part of the student's class record.

Senior students will be detailed in turn for service as internes at the University Dispensary for periods of two weeks each. During such service they must be in residence at the Dispensary and must be on call for night service at any hour.

All students assigned to Dispensary service must be in prompt and regular attendance at the Dispensary between the hours of 1:00 and 2:15 p. m.

REQUIREMENTS FOR GRADUATION

A candidate for the degree of Doctor of Medicine must be of good moral character, and must have satisfied all the requirements for admission, complied with all the rules and regulations of the College, and obtained credit for all the work of the complete course.

For all students entering in September, 1911, and thereafter, the complete course includes a fifth year spent as interne in an approved hospital or in laboratory studies in this College in preparation for teaching.

All students entering in September, 1912, and thereafter, must secure the degree of B.A. or B.S. from this University or an approved college before the M.D. degree will be conferred.

MINNESOTA STATE BOARD OF MEDICAL EXAMINERS

Requirements for License

Examinations are held in the months of January, April, June, and October.

Candidates are required to take examinations in the following subjects: Anatomy, Physiology, Chemistry, Histology, Materia Medica, Therapeutics, Preventive Medicine, Practice of Medicine, Surgery,

Obstetrics, Diseases of Women and Children, Diseases of the Nervous System, Diseases of the Eye and Ear, Medical Jurisprudence, and such other branches as the Board shall deem advisable.

Candidates will also be required to take practical examinations in Dissections, Pathology, Histology, Bacteriology, Urinalysis, and Clinical Diagnosis.

The National Confederation of State Licensing and Examining Boards in June, 1906, adopted the requirements of one or two years of college work, including at least one year's work in Physics, Chemistry, Biology, and Languages, as the minimum entrance standard to apply to all students beginning the study of Medicine after June 1, 1910. The State Medical Board of Minnesota will, after 1912, require the evidence of the completion of two years' Academic work in an approved college.

STUDENT LOAN FUNDS AND PRIZES

The Gilfillan Trust Fund

The Hon. John B. Gilfillan has given to the University the sum of fifty thousand dollars, yielding an annual income of two thousand dollars, to be used by the Board of Regents to assist worthy students, needing such aid, to secure an education. The Regents are empowered to give this aid in the way of loans or gifts, according to the circumstances of the case. As a rule the fund is used as a loan fund, and a small rate of interest is charged. The details of the regulations which have been adopted by the Regents for the administration of the fund may be learned by addressing the President of the University.

Academy of Medicine Fellowship

The Minnesota Academy of Medicine has made provision for a research fellowship in the College of Medicine and Surgery, which bears an annual stipend of \$250 to \$300. The appointment of the incumbent is placed in the hands of a committee of the Academy of Medicine, who will determine also the character and extent of the work and in what department it shall be undertaken.

Further information may be obtained from the Dean of the College of Medicine and Surgery.

The Rollin E. Cutts Prize in Surgery

Dr. Mary E. Smith Cutts, '91 Medical, has given the University, as a memorial of her husband, the late Dr. Rollin E. Cutts, '91 Medical, the sum of \$500, the income from which is to be awarded in the form of a gold medal to that member of the senior class of the College of Medicine and Surgery who presents the best thesis showing original work upon a surgical subject.

The Dr. J. W. Bell Prize

Through the generosity of Dr. John W. Bell, Emeritus Professor of Clinical Medicine and Physical Diagnosis, an annual prize of \$100 is offered

in the College of Medicine and Surgery, to the student showing the highest proficiency in Physical Diagnosis.

Candidates will be selected at the beginning of the senior year from those who have done especially good work in sophomore physical diagnosis and have maintained a universally high grade in general medicine throughout the junior year.

The award will be made upon the basis of the work of the sophomore, junior, and senior years in the various subjects which constitute practice.

The D. Appleton and Company Prize

D. Appleton and Company have offered for the year 1912-13 to the students of this College a prize of fifty dollars' worth of their books to be selected by the successful competitor. The prize will be awarded by a committee of the Faculty to the undergraduate student presenting the best thesis upon some medical subject. The thesis must include the results of original observation and investigation in the clinics or laboratories of this College, together with a review of the literature and a bibliography.

Shevlin Fellowships

Four fellowships, each being the income from \$10,000, have been established in the Graduate School through the gift of \$40,000 by the late Thomas H. Shevlin, of Minneapolis. The donor has designated the objects of these four fellowships as follows: Academic, Agriculture, Chemistry, and Medicine.

EQUIPMENT

GROUNDS AND BUILDINGS

The medical buildings are located on the University campus, overlooking the Mississippi River. They are situated between the business centers of Minneapolis and St. Paul and close to the two most direct interurban trolley lines which enable the students to reach conveniently all the hospitals of the two cities.

The buildings include the laboratories of Chemistry which are soon to be replaced by new buildings; the Institute of Public Health and Pathology; the new Millard Hall and the Institute of Anatomy to be occupied in 1912; the University Hospitals including the Elliot Memorial Building, the isolation hospital, and certain buildings used for hospital service and nurses' homes. In addition, the College occupies one building in each of the Twin Cities for the purposes of out-patient departments.

Chemistry is taught in two buildings. The main four-story brick building constitutes the headquarters of the School of Chemistry. The Laboratory of Medical Chemistry is a one-story brick building devoted to the uses of this department. It is equipped with amphitheater, two teaching laboratories, preparation rooms, balance room, storage rooms, and private offices of the staff of this department.

The Legislature in 1911 appropriated \$405,000 for the erection of new chemical laboratories, plans for which are now being drawn.

The Institute of Public Health and Pathology is a two-story and basement brick and stone building, of thoroughly modern and fire-proof construction. A portion of the building is devoted to the laboratory and record rooms of the State Board of Health, including the Pasteur clinic. The remainder of the building is occupied by the teaching laboratories of Bacteriology, Pathology, and Surgical Pathology, and by the research rooms and offices of the staff serving in these departments.

The new Millard Hall is a four-story and basement building of brick and concrete construction, fire-proof throughout and provided with modern systems of heating, ventilation, lighting, etc. The larger portion of the building as designed is under construction at a cost of \$326,000 (building, \$266,000; equipment, \$60,000). It is to be occupied during the summer of 1912 by the offices of the Dean and the Departments of Physiology and Pharmacology, Medicine, and Surgery.

The Institute of Anatomy is a companion building which has in addition a sub-basement for refrigeration and other machinery. The portion now being built will cost \$310,000 (building, \$243,000; equipment, \$67,000). It will be occupied in 1912 by the Departments of Anatomy and Obstetrics and Gynecology.

CLINICAL FACILITIES

The Twin Cities, with a population of 500,000, afford through their several hospitals a clinical service to the University, represented by nearly 2,500 beds.

In addition to the clinical facilities which are generously offered by the hospitals of Minneapolis and St. Paul, the University conducts a hospital service of its own. The College of Medicine and Surgery opened temporary medical and surgical wards and a University Training School for Nurses in six buildings on the new campus in March, 1909. The operation of these proved the exceptional adaptation to educational purposes of a hospital service conducted by the College itself.

UNIVERSITY HOSPITALS

The first building of the permanent hospital group was made possible by the gift of the late Dr. and Mrs. A. F. Elliot and Mr. Walter J. Trask, their executor, of Los Angeles, California. This gift, which amounted to \$113,000, was supplemented by an accrued interest to the amount of \$7,000, and by a legislative appropriation of \$40,000, making a total of \$160,000 available for the construction of a hospital building. A beautiful site was chosen upon the ground which constitutes a part of the new medical campus overlooking the Mississippi River. The building was completed and occupied in September, 1911. It is fire-proof, sound-proof, and in every way adapted to teaching purposes.

The temporary hospitals provided 60 beds for patients, and of those one building with a capacity of 24 beds is retained for isolation purposes. The Elliot Memorial Building has 120 beds. It is the first building of a projected hospital system having an ultimate capacity of at least five hundred beds.

Patients are admitted to the service only upon the certificate of physicians of the State, which testify to the applicant's inability to pay ordinary hospital charges and physician's fees, and which state the character of the case. No paying patients are received.

The hospital system is planned for the attainment of the highest possible results in the interest of patients and students alike, and demands the unselfish and self-sacrificing work of every member of the clinical staff. The laboratory departments co-operate with the staff physicians, and every resource of modern medical science is made available for the accurate diagnosis and treatment of diseases and for the application of the best clinical methods in the teaching of medicine.

Surgical clinics are held in the University Hospitals from 8:30 to 11:30 a.m. every Thursday and Saturday by the Hospital Staff.

ALLIED HOSPITALS

Almost the entire clinical service of both public and private institutions in the Twin Cities is placed at the service of the College of Medicine and Surgery. The members of the Faculty are adequately represented upon the attending and consulting staffs of the two cities.

The junior and senior classes are divided into small sections and are assigned, in rotation, not only to the University hospital service, but to the numerous services of these neighboring institutions. The opportunities of observation and case study are thus greatly multiplied and the student is brought into constant close touch alike with teacher and patient.

Since the opening of the University Hospitals, the material has been so varied and so abundant that the surgical clinics in Minneapolis have been limited to the University and Minneapolis City Hospitals, thus saving the time of students formerly spent in traveling from place to place.

St. Paul City and County Hospital has a capacity of 600 beds and is the largest and most complete of its kind in the Northwest. Many of the members of its staff are on the staff of this College and its entire clinical facilities are at the disposal of the College. It enters over 5,500 patients annually, a large proportion of whom are of the emergency order or are suffering from acute disease. The opportunities for bedside instruction are very great, and the hospital theatres, which are new and perfectly appointed, are maintained for teaching purposes. A recent and thoroughly modern fire-proof pavilion for contagious diseases is provided, where the students have unexcelled opportunities to study diphtheria, scarlatina, erysipelas, etc. A separate building is provided for midwifery, and senior students see labor cases under the personal supervision of the Professor or Instructor in Obstetrics.

The Orthopedic Department receives a large number of crippled and deformed children, and houses the State Hospital for Crippled and Deformed Children. All of this work is under the direction of the Professor of Orthopedic Surgery of this College.

The City Hospital, Minneapolis, places its entire clinical material at the command of the clinical teachers of the University. It is a large, thoroughly modern hospital with splendid equipment. A new wing is under construction, to be occupied in the fall of 1912, when the hospital will have a capacity of 555 beds. During the year 1911, 2,759 patients were treated in the hospital, and 11,887 patients in the out-patient department and hospital dispensary. A contagious ward furnishes excellent opportunities for bedside clinical instruction in contagious diseases under the direction of the Professor of Diseases of Children. In the City Hospital, bedside and amphitheatre, medical or surgical clinics are conducted daily throughout the year by members of the Faculty. Clinics in diseases of the skin, nervous diseases, obstetrics, etc., are likewise given in the hospital throughout the school year. A special feature is made of medical bedside clinics in the wards of the hospital to small sections of senior students, during the year, by members of the Faculty.

Asbury Methodist Hospital, Minneapolis, affords clinical material for the State University. The authorities have recently erected a large and beautiful building, only a portion of which is as yet occupied. It has a capacity of over 100 beds. Many members of the Faculty are on the staff of the hospital and give clinics.

St. Joseph's Hospital, St. Paul, with 150 beds and one of the finest amphitheatres with every modern device, contributes largely to the clin-

ical instruction. Additions have been built during the past year and a complete X-ray equipment installed. Members of the Faculty are on the staff and give clinics there to the students.

Northwestern Hospital, Minneapolis, has a capacity of 100 beds and during 1911 admitted 1,497 patients.

St. Luke's Hospital, St. Paul, with a capacity of 100 beds, is largely devoted to surgical clinics. Clinics of this College are held in this hospital by many members of its staff who are on the College Faculty. Two operating rooms, with conveniences for students, give unusual facilities and a service of the highest order.

The Swedish Hospital, Minneapolis, with a capacity of 150 beds, is housed in a newly-constructed modern building and members of this Faculty exclusively utilize the material of the hospital for teaching purposes. During the past year 2,482 patients were treated.

St. Barnabas Hospital, Minneapolis, with a capacity of 150 beds, furnishes medical and surgical material for clinics to junior and senior classes of the University. Clinics are held throughout the college year. During the preceding year, 2,222 patients were treated at this hospital.

St. Mary's Hospital, Minneapolis, also furnishes clinical material for the University. The hospital is located directly across the Mississippi River from the new University Hospital. It has a capacity of 100 beds and treated 1,540 patients during the year.

The Thomas Hospital which affords treatment exclusively for tuberculosis cases in all stages and forms, is located immediately across the river from the new University Hospital. It has a capacity of 50 beds.

The College of Medicine and Surgery is in intimate relationship with the medical staff of the various state correctional and charitable institutions, for which Minnesota is justly noted. St. Mary's Hospital, Rochester, St. Mary's Hospital, Duluth, and the Duluth Department of Health are also in close affiliation with the College through their laboratory services.

Internships for Juniors

Four internships during the summer months are available at the State Hospital for the Insane, St. Peter, Minn., where most excellent opportunities are afforded for clinical and laboratory study of general disease processes as well as in the special field of mental and nervous diseases, under the direction of Dr. H. E. Tomlinson, Superintendent, and his associates. A similar internship is available in the hospital of the State School for the Feeble-Minded at Faribault under the direction of Dr. A. C. Rogers, Superintendent, and his staff.

OUT-PATIENT SERVICE

The University owns a clinical building situated upon the west side of the Mississippi River, within a few hundred yards of the campus, in which a dispensary service has long been conducted. This service has now been associated with the University Hospital as its out-patient department and is under the same general organization.

The out-patient service is manned by members of the general staff and clinical assistants, under the direction of a chief of staff. Its service is divided into medical, surgical, gynecological, obstetrical, children's, eye and ear, nose and throat, skin, genito-urinary, nervous and mental, and orthopedic clinics. In these, some 15,000 consultations are recorded each year.

Senior students are required to attend the clinics daily, and are drilled in taking of histories, in making of physical examinations, the writing of prescriptions, etc. Sections of senior students are assigned each day to the out-patient pharmacy and to the clinical laboratory, where they have opportunity to fill prescriptions and to make clinical diagnoses. The out-patient department also provides a resident service for senior students, which is elective and open to a limited number. Students selecting this service are required to reside at the dispensary and attend emergency, accident, or sick calls, under the direction of the staff. An externship has also been established in the out-patient department, and will be open to competitive examinations for appointment.

An obstetrical out-service department is well established, and obstetrical cases are assigned to sections of senior students under the directions of some member of the staff in this field. So far as possible, these cases are referred to the University Hospital for care and attendance.

Allied Dispensaries

The free dispensary of the city of St. Paul is privately incorporated, but is manned by members of the Faculty of this College, and is open to the attendance of University students who are regularly assigned to its clinics. It is centrally located in a twenty-room building at 204 W. 9th St., St. Paul. It receives over 10,000 visits each year.

The tuberculosis clinics of St. Paul and of the City Hospital at Minneapolis are available to the college, and the clinic of the Thomas Hospital, Minneapolis, is open to the attendance of its students.

LIBRARY OF THE DEPARTMENT OF MEDICINE

THOMAS G. LEE, B.S., M.D., Librarian

The medical library consists of the following collections: The general clinical library, the libraries of the Colleges of Dentistry and Pharmacy, the departmental libraries of Medicine, Pathology and Bacteriology, Anatomy, Physiology and Pharmacology. These contain nearly 10,000 bound volumes, 14,000 unbound volumes, monographs, reprints, dissertations, etc., and 200 current periodicals. In addition to the above, the libraries of the State Board of Health, of Hennepin County Medical Society, containing 4,000 volumes and 50 journals, and of the Ramsey County Medical Society, with some 7,000 volumes and 150 journals, give the student additional opportunity to consult all the more important medical and sanitary publications.

The general University library contains some 145,000 bound volumes, 30,000 unbound volumes and pamphlets, and about nine hundred current periodicals. The public libraries of Minneapolis, with 160,000 volumes, and of St. Paul, with some 90,000 volumes, the State Historical Library of 85,000 volumes, and the State Library of 59,000 volumes, the Library of the Minnesota Academy of Natural Sciences of some 12,000 titles, place before the student the greater part of the important literature relating to all branches of the physical and natural sciences as well as works of general culture and those pertaining particularly to medicine. All of these collections are readily accessible to the student.

A noteworthy addition to the medical library is the recent acquisition by the Department of Anatomy, through the generosity of Alfred F., John S., and Charles S. Pillsbury, of a large portion of the working library of the late Professor William His, of Leipzig, containing about 8,500 titles and representing some 2,500 authors.

Recently the library has secured through the gift of Doctors C. J. and C. H. Spratt the valuable library on Ophthalmology of Professor Hermann Cohn, of Breslau, numbering some 2,000 titles.

The clinical library of the College is being housed in comfortable quarters in the new Millard Hall. The building is thoroughly fireproof and the books are shelved in steel stacks. The library is open to all members of the profession as well as to the various departments of the college.

Dr. Charles A. Wheaton, of St. Paul, Emeritus Professor of Surgery, has donated his library to the college. It includes an unusually valuable collection of surgical works numbering about two thousand volumes. The books are being catalogued and will be deposited in Millard Hall.

Dr. Charles Lyman Greene, Professor of Medicine, has given his library, including valuable sets of periodicals, to the college to be deposited in Millard Hall when completed.

The library of Dr. M. P. Vander Horck, Professor of Diseases of the Skin and Genito-Urinary Organs, lately deceased, has been donated to the college by Mrs. Vander Horck.

COURSES OF INSTRUCTION

THE COURSE IN MEDICINE

The course in Medicine requires a minimum of seven years of work, two years in a recognized college of arts and sciences, and five years in the College of Medicine and Surgery.

For students who enter the College of Medicine and Surgery in September, 1911, and thereafter, the fifth year of residence in the College of Medicine and Surgery will be spent either (a) as interne in a hospital which is approved by the Faculty, or (b) as an advanced student in one of the laboratories of this College in preparation for teaching. The M.D. degree will not be conferred until the close of this year of hospital internship or of advanced study.

The intention of the Faculty in establishing the year of hospital internship was to require of all candidates for the M.D. degree a year of clinical experience under competent supervision and in well equipped modern hospitals. For this purpose a list of approved institutions in this and other states is being prepared. In the University Hospitals and those of the Twin Cities the work of the interne will be under the close observation of members of the staff of instruction of this College, and it is expected that the staffs of other hospitals will make official detailed reports upon the work of such students as become internes in their institutions.

The object of this hospital year is to ensure to the public competent practitioners and to give to the graduates of this College further assurance of efficiency in their profession.

In January, 1912, the Faculty decided that in order to encourage men with medical training to enter the profession of teaching in laboratory subjects in medical colleges, it was wise to offer to those who show especial promise in scientific work a year of advanced work in the laboratories of the college in lieu of this year of hospital internship. Upon the successful completion of a year of special studies such students will be granted the M.D. degree. Students desiring to avail themselves of this must indicate their intention not later than the middle of their sixth year, and must receive the approval of the head of the department in which they wish to work and of the Executive Faculty.

The twenty-fourth annual course of study in this College will begin on Wednesday, September 18, 1912, and will continue nine months, or thirty-six weeks, exclusive of holidays, closing upon Saturday, June 7, 1913. The college year is divided into two semesters; the first semester ends February 1, 1913. The last week is devoted mainly to mid-year examinations which will be conducted in many of the departments. The second semester will begin February 5, 1913, and close June 7, 1913. Certain of the courses of study terminate on November 14th, and April 10th. Commencement exercises will occur in common with the other departments of the University during the week ending June 12, 1913.

EIGHT-YEAR COURSE LEADING TO THE DEGREES OF BACHELOR OF ARTS AND DOCTOR OF MEDICINE

Students who have completed their junior work in the College of Science, Literature, and the Arts in this University may elect the first year's work in the College of Medicine and Surgery as the work of their senior academic year, and upon satisfactory completion of the same will receive the degree of B.A. from that college. (See also Bulletin of the College of Science, Literature, and the Arts.)

Students entering upon the medical part of this eight-year combined course must present evidence of having fulfilled all the requirements for admission stated on page 18 of this Bulletin.

Carleton and Macalester Colleges have entered into an arrangement with the University of Minnesota whereby students of these colleges have the same opportunities in this regard as those of the College of Science, Literature, and the Arts of this University.

By this arrangement students who have completed the five years' work in Medicine will have received both degrees in a period of eight years. As this course gives greater opportunity for elective studies in the Academic College it is strongly recommended.

SEVEN-YEAR COURSE LEADING TO THE DEGREES OF BACHELOR OF SCIENCE AND DOCTOR OF MEDICINE

In the year 1903-04 the University established a six-year course of study arranged especially for students of medicine. This course has now been lengthened to seven years as indicated on a previous page and is required of all who do not take the eight-year course described above. The first two years are given in the College of Science, Literature, and the Arts, of the University of Minnesota or other approved institutions, and the last five years are given in the College of Medicine and Surgery. It leads to the degree of Bachelor of Science at the end of the first four years, and to the degree of Doctor of Medicine at the end of the seven-year course.

The student must complete during the two years of academic work all the courses listed under *Requirements for Admission* on page 18, or their equivalent in other approved colleges.

The work of the four years of class instruction in medicine is listed in the schedule at the end of this Bulletin.

GRADUATE WORK

Students in the College of Medicine and Surgery may become candidates for the degree of M.A., M.S., or Ph.D. in the Graduate School. Candidates must have received the bachelor's degree from this University or an approved college, and in addition to the work credited toward the

M.D. degree, must pursue courses of study conforming to the regulations of the Graduate School. Students looking forward to teaching may offer the advanced laboratory work of their post-senior year toward any of these graduate degrees.

Opportunity is offered for students registered in the Graduate School to take majors or minors for the degree of M.A., M.S., or Ph.D. in advanced courses in Anatomy, Bacteriology, Embryology, Histology, Neurology, Pathology, and Physiology in the College of Medicine and Surgery.

In all cases the students must comply with the rules and regulations of the Graduate School of the University of Minnesota.

Students registered in the Graduate School pay a fee of \$10. The amount of additional charges for the various laboratory or other courses open to special or graduate students can be learned at the office of the Dean of the College of Medicine and Surgery.

SPECIAL STUDENTS

Special students, properly qualified, whether they be graduates in Medicine or not, may be admitted to many of the courses offered in the College of Medicine and Surgery.

THE SCHOOL FOR NURSES

The School for Nurses is conducted in connection with the hospital service under the control of the College of Medicine and Surgery.

It is in charge of a superintendent assisted by a teaching staff selected from the Faculty of the College under the direction of the Committee on School. While the undergraduates of the school constitute the nurses' corps of the University Hospital, the School exists primarily for the efficient education of nurses. It is the first training school in the United States under direct university control.

A four years' high school course is the minimum requirement for admission. Preference will, however, be given to women of superior preliminary attainments. Applicants are required to undergo a general physical examination to determine their fitness for the service, and are expected to present suitable business and social references.

A preliminary four months' course of instruction in Anatomy, Physiology, Chemistry, Bacteriology, Pharmacology, Public Health, English, Physical Culture, History and Principles of Nursing, and Hospital and Household Economics is given to the students of the school in the laboratory and lecture rooms of the University.

Examinations at the close of this course must be successfully passed. Students during this four months' course are not in residence. The course is under a fee of \$25.

Students who have completed the preliminary course are admitted to the hospital service on two months' probation.

Upon final acceptance they are entered for the remaining two and one-half years' work in hospital. They will serve in rotation in the medical and surgical wards for men and for women, in the obstetric service, in special departments of practice, and in their senior year will be assigned to out-patient clinics and visiting nursing. Lecture courses in connection with the practical training are given by members of the Faculty and by the superintendent throughout each year. Examinations will be held at the close of each year's work.

The complete course will lead up to the degree of Graduate in Nursing, conferred upon recommendation of the Faculty, by the Board of Regents of the University.

Graduates will be admitted upon competitive examination to a post-graduate course, during which they will serve in the capacity of head nurse and will be given the opportunity to pursue special lines of study.

DEPARTMENTAL STATEMENTS

DEPARTMENT OF ANATOMY

THOMAS G. LEE, B.S., M.D., Professor of Anatomy and Director of the Department

CHARLES A. ERDMANN, M.D., Professor of Gross and Applied Anatomy

JOHN B. JOHNSTON, Ph.D., Professor of Comparative Neurology

RICHARD E. SCAMMON, Ph.D., Assistant Professor of Anatomy

_____, Assistant Professor of Anatomy

WILLIAM A. HILTON, Ph.D., Instructor in Histology and Embryology

WILLIAM F. ALLEN, M.A., Instructor in Histology and Embryology

_____, Instructor in Anatomy

EUGENE K. GREEN, B.A., M.D., Associate in Anatomy

HENRY JOHN, B.A., Shevlin Fellow in Anatomy

WILLIAM KING, Departmental Assistant in Anatomy

The Department of Anatomy is housed in the recently erected Institute of Anatomy, and provides for undergraduate instruction in the following branches: dissections, histology, neurology, embryology, osteology, topographical and surgical anatomy, anatomical technique, and for graduate work in any of the several branches of anatomy.

The Institute of Anatomy is situated on the new campus on the south side of Washington Avenue. The present structure comprises a central portion and one wing, provision being made for a future second wing. The central portion measures 100 by 64 feet, and the wing 140 by 64 feet, and consists of a basement, first, second, and third floors. A roof house forming a fourth story extends over a portion of the building, and there is also a sub-basement under the present wing. The total floor space amounts to about 60,000 square feet. There was appropriated for the erection of the building \$243,342.00, and for the equipment of the same, \$67,200.00.

The various anatomical courses occupy portions of the third, fourth, and fifth years of the college work. In the third year osteology, histology and splanchnology, dissection, and embryology are studied; in the fourth year neurology, anatomy of the special sense organs, and topographical anatomy. In the fourth year provision is made for additional work in surgical and applied anatomy. These courses are arranged in sequence in relation to each other and to the other departments of work in the College.

Each student is loaned a box containing a human skeleton for the purpose of study in osteology. In histology, in embryology, and in neurology, in addition to specimens completed by the students themselves, there are very large collections of specially prepared sets of slides and series of embryos which are loaned to the student during the course.

The departmental library contains a carefully selected and rapidly growing collection of reference literature, both standard and periodical.

All of the anatomical periodicals are received and complete sets of nearly all are available. An important addition to the library was the gift of the working anatomical collection of the late Prof. William His, of Leipzig. The other libraries of the University, as well as those of the Twin Cities, render it possible to consult practically all of the important anatomical and biological literature.

Opportunities for Advanced and Graduate Students

The Institute of Anatomy is in position to offer excellent facilities in the form of rooms, material, apparatus, reagents, literature, assistance in the preparation of plates and in securing the proper publication of research work, and the advice and aid of the entire staff to advanced and graduate students who desire to pursue work in any phase of human or vertebrate anatomy, gross or microscopic, histology, embryology, neurology, osteology, cytology, etc.

A. To graduates in Medicine or advanced medical students to undertake special work in anatomy, in its relation to clinical medicine and surgery.

B. To graduate students to take work in some branch of anatomy as a minor or to pursue original investigation in anatomy as a major leading to the degree of M.A., M.S., or Ph.D.

For minors, see Courses 1, 2, 3, 4, 5, 16; for majors, see Courses 5, 16, 17, 18, 20, 22.

C. To properly qualified students who intend fitting themselves for teaching positions in any branch of anatomy, aid in the form of scholarships, fellowships, positions of assistants or research assistants will be provided wherever possible.

1. Histology and Splanchnology of Man and Vertebrates Drs. LEE and HILTON and Mr. ALLEN

Three lectures and nine hours laboratory per week; third year, first semester. Prerequisite, Zoology 1 or equivalent.

The structure and properties of protoplasm; the cell, its structure; the phenomena of cell division. A comparative study of the histology of the epithelial, connective, and muscular tissues, the blood, and the vascular and lymphatic systems of man and vertebrates, followed by a comparative study of the anatomy, gross and microscopic, of the various organs of the alimentary, respiratory, and urogenital, cutaneous, vascular, and lymphatic systems.

2. Comparative Embryology of Man and Vertebrates Drs. LEE, JOHNSTON, and HILTON, Mr. ALLEN and ASSOCIATES

Two lectures and six hours laboratory per week; third year, second semester. Prerequisite, Zoology 1 or equivalent.

A comparative study of reproduction, the germ cells, fertilization, cleavage, implantation of ovum, formation of germ layer, fetal membranes, placenta, formation of body. The histogenesis of tissues, development of organs. The course includes practical work upon a large collection of series of embryos cut in various planes and representing all phases of development. The elements of teratology are considered as far as time permits.

3. Human Osteology

Dr. ERDMANN

Third year, first semester.

Lectures, recitations, and laboratory work upon the human skeleton and supplementary work on the osteology of the other vertebrates. A practical study of the skeleton, followed by recitations from the specimen.

4A. Dissections

Drs. ERDMANN, SCAMMON, and ASSOCIATES

Twelve hours per week; third year, first semester. Prerequisite, Zoology 1 or equivalent.

The student makes a complete dissection of all the structures of either the upper or lower half of the human body, using text-books, atlases, and models as guides. The work is largely independent, and a dissection must be completed in the quarter in which it is undertaken.

4B. Dissections, Continuation of Course 4A.

Drs. ERDMANN, SCAMMON, and ASSOCIATES

Nine hours per week; third year, second semester.

In this course the student completes the dissection of the other half of the human body.

5. The Human Nervous System

Drs. JOHNSTON and HILTON

Two lectures and seven hours laboratory; first semester. Prerequisite, Anatomy 1 and 2; or Zoology 2 or 5.

The special sense organs and the central nervous system are studied by dissection and in microscopic preparations. The student makes a full dissection of the eye, and other sense organs, and of the fiber paths in all segments of the human brain. Each member of the class is supplied with a series of sections of the brain stem (every twentieth transverse section) and with numerous preparations of the spinal cord, cerebellum, cortex, and other regions stained by the Nissl, Golgi, Weigert, and other methods. In these the fiber tracts and nerve centers are worked out in comparison with the dissections. A large collection of mammalian and fetal and adult human preparations is used for demonstration.

This course may precede or follow Course 16. Both should be taken by candidates electing neurology as a major for the M.A. or as a minor for the Ph.D. degree.

6. Topographical Anatomy

Dr. ERDMANN

Two lectures and two hours laboratory work per week; fourth year, second semester.

A study of frozen sections, special dissections, and work on the living model in preparation for the work in clinical medicine.

7. Surgical and Applied Anatomy

Dr. ERDMANN

Two lectures and two hours laboratory work per week; fifth year, first semester.

A comprehensive review of the relationships of anatomical structures in their application to clinical surgery, comprising surface anatomy, the outlining of organs, the location and significance of landmarks, determination of blood vessels and nerves, regional anatomy, influence of muscles in fractures, etc. Instruction is given by means of the living model, cadaver, special dissection, the lantern, models, and a study of frozen sections.

11. Course in Descriptive Anatomy for Dental Students

Dr. SCAMMON and ASSOCIATES

Six hours lecture and recitations, six hours laboratory work per week; first year, first semester. A specially planned course open only to dental students.

12. Dental Histology and Embryology

Drs. LEE, HILTON, Mr. ALLEN and ASSISTANTS

Two lectures and six hours laboratory work per week; first year, second semester. A modified and specially arranged course, open only to dental students.

The structure and histogenesis of the organs and tissues of the body, the structure and development of the teeth and jaws, mouth cavity, and glands.

13. Course in Dissection for Dental Students

Dr. SCAMMON and ASSOCIATES

Twelve hours per week laboratory and recitations; first year, second semester. Open to dental students only.

14. Course in Anatomy for Nurses

Drs. LEE and ERDMANN

Lectures, recitations, demonstrations, and laboratory exercises three hours per week, one semester.

16. Comparative Neurology of Vertebrates

Dr. JOHNSTON

Two lectures and eight laboratory hours; either semester. Prerequisite, Zoology 2 or 5; or Anatomy 1 and 2.

Intended for graduates; open by permission to juniors and seniors who meet the requirements. See note to Course 5. This course should be taken by students preparing for teaching in neurology.

17. Spinal Cord, Brain Stem, and Cerebellum

Dr. JOHNSTON

Elective; either semester. Prerequisite, Course 5 or 16.

Normal and experimental studies of the structure of the central mechanisms involved in reflex actions.

18. The Evolution and Structure of the Cerebral Cortex

Dr. JOHNSTON

Elective; either semester. Prerequisite, Course 5 or 16.

A study of the cerebral cortex with especial reference to the localization of function and the processes by which localization has been determined.

19. Neurological Technique

Dr. JOHNSTON

Elective; either semester. Prerequisite, Course 1.

Practical work in the preparation of the nervous system for gross and microscopic study.

20. Research in Neurology

Dr. JOHNSTON

Credit in proportion to work done; either semester.

Qualified students may undertake the investigation of problems in either human or comparative neurology.

21. Anatomical Technique

Dr. LEE

An elective course of lectures and practical laboratory work; either semester.

The work consists of a careful study of the principles and practice of microtechnique, fixation, sectioning, staining, making drawings for illustrations, methods of reconstruction, injection, corrosion methods, museum methods, etc., of special value to those who intend qualifying for laboratory positions.

22. Research in Human and Vertebrate Anatomy Dr. LEE
The following elective courses are open to properly qualified students who desire to take work in some branch of Anatomy as a major leading to the degrees of M.A., M.S., or Ph.D.

- 22A. Cytology and Histogenesis Dr. LEE
Either semester. Prerequisite, Courses 1 and 2.
A comparative study of the animal cell, the differentiation of the tissues and organs.

- 22B. Advanced Vertebrate Morphology Dr. LEE
Either semester. Prerequisite, Course 1 and 2.
A comparative study of the gross and microscopic anatomy of the organs of the body in man and vertebrates.

- 22C. Advanced Vertebrate Embryology Dr. LEE
Lectures, reading, and laboratory; either semester.
A comparative study of the processes of embryonic development in man and vertebrates.

- 22D. Experimental Embryology Dr. LEE
Either semester. Prerequisite, Courses 1 and 2.
A study of the changes produced in embryonic development by means of experimental methods.

- 22E. Special Dissections Dr. SCAMMON
Either semester. Prerequisite, Courses 1, 2, 4.
Elective course in dissections, each student making a careful study of one or more special parts or regions of the body.

25. Anatomical Journal Club and Seminar.
Weekly meetings during the year for reviews of the current literature and discussion of special topics in Anatomy, Histology, Embryology, and Neurology, and of the research work being carried on in the department.

The following text-books should be consulted:

Dissections and Splanchnology.—Piersol, Anatomy; Cunningham, Morris, Poirier and Charpey, Rauber-Kopsch; Spalteholtz Atlas; Barker, Laboratory Manual; Cunningham, Manual of Dissection; Treve, Applied Anatomy; Quain, Anatomy; Flower, Osteology of Mammals; Gegenbauer, Elements of Comparative Anatomy; Wiedersheim, Elements of Comparative Anatomy; McClellan, Regional Anatomy; Deaver, Surgical Anatomy; Hildebrand, Chirurgisch Topographische Anatomie; Schultze, Applied Anatomy; Eisendrath, Clinical Anatomy; Boxe and Eccults, Applied Clinical Anatomy.

Histology and Microscopic Anatomy.—Stöhr-Lewis, Histology; Quain, Splanchnology, 11th edition; Piersol, Histology; Böhm-Davidoff-Huber, Histology; Schaefer, Histology; Bailey, Histology; Ferguson, Histology; Szymonowicz-MacCullum, Histology; Sobotta-Huber, Atlas; Lee, Vade Mecum; Kolliker, Gewebelehre; Oppel, Mikroskopische Anatomie.

Neurology.—Van Gehuchten, Systeme Nerveux; Johnston, Nervous System of Vertebrates; Barker, Nervous System; Efinger, Vorlesungen und Einleitung; Cajal Systeme Nervioso; Kolliker; Obersteiner; Bechterew; Dejerine; Atlases by Sabin, Marburg, Nebelthau, Retzius, Bruce, Hasse.

Embryology.—Keibel and Mall, Human Embryology; Quain, Embryology, 11th edition; Minot, Laboratory Text-book; Minot, Human Embryology; Bailey-Miller, Embryology; Hertwig-Mark, Embryology; Heisler, Embryology; Marshall, Embryology; Kolliker, Embryologie; Schultze, Embryologie; Kollmann, Embryologie; Schenk, Embryologie.

DEPARTMENT OF PHYSIOLOGY AND PHARMACOLOGY

RICHARD OLDING BEARD, M.D., Professor of Physiology and Director of the Department

EDGAR D. BROWN, Phm.D., M.D., Professor of Materia Medica and Pharmacology

FREDERICK H. SCOTT, M.B., Ph.D., D.Sc., Assistant Professor of Physiology

M. RUSSELL WILCOX, M.D., Assistant Professor of Physiology

ROBERT B. GIBSON, Ph.D., Assistant Professor of Physiologic Chemistry

WILLIAM H. CONDIT, B.S., M.D., Clinical Instructor in Therapeutics and Materia Medica

CHARLES F. DIGHT, M.D., Lecturer in Pharmacology and Materia Medica

ADDISON GULICK, M.A., Ph.D., Instructor in Physiologic Chemistry

FLETCHER O. MACFARLAND, B.S., M.D., Instructor in Physiology

JULIUS PARKER SEDGWICK, B.S., M.D., Assistant Research Professor in Physiologic Chemistry

FREDERIC W. SCHLUTZ, B.A., M.D., Research Associate in Physiologic Chemistry

Departmental Office in Millard Hall

The Department of Physiology and Pharmacology will occupy its permanent quarters, during the summer of 1912, in the new Millard Hall, which is now approaching completion, upon the new medical campus. This department will enjoy about three-fifths of the space provided in the building. In addition to the lecture amphitheaters, shared with other departments, it will equip a large students' laboratory of experimental physiology, two class laboratories of physiologic chemistry, an equally spacious laboratory of experimental pharmacology, demonstration rooms, a number of small apartments for the secluded study of special sense phenomena, a laboratory of materia medica, the offices and private laboratories of the individual members of the staff, and special laboratories for postgraduate study.

In the basement of the new Millard Hall the department will be provided with a diet kitchen, motor and still rooms, an insulated chamber for the electro-cardiograph-galvanometer, combustion rooms, and ample workshops and store rooms.

In the roof house will be placed animal enclosures of thoroughly modern and sanitary equipment, as well as small laboratories for experimental studies along special lines.

The course in Physiology is graded in the third and fourth years. Under the concentration system in vogue, one-half of the student's time is occupied with this study during one semester of each of these two years.

Each phase of the subject is treated as a unit, i. e., the laboratory courses in physiologic chemistry, experimental physiology, physical chemistry, etc., are correlated and interwoven with the lecture courses. The work is essentially practical and is individualized as much as possible.

In the third year, the student takes up the study of the physiologic components of the animal body; the physiologic and physical properties of tissue cells in general; the nutritive media; and the neuromuscular mechanisms. He then enters upon the study of systemic physiology, taking in turn, the circulation, digestion, and secretion.

In the fourth year, the same methods are applied to the phenomena of respiration and excretion and to the problems of metabolism and nutrition. The student makes a complete nutritive balance, based upon a series of actual feeding experiments, including the analysis of a standard dietary, the qualitative and the quantitative examination of the feces and urine, the estimation of the total and differential nitrogens, and the determination of respiratory quotients.

In relation to the study of nutrition, the physiology of development and the distinctive physiologic conditions of successive ages of human life are discussed.

The last half of the semester is occupied with the discussion and laboratory study of the physiology of the nervous system, special attention being paid to the observation and testing of special sense phenomena, cerebral localization, etc.

The course in Pharmacology, Materia Medica, and Therapeutics is similarly graded in the fourth, fifth, and sixth years. By lectures, demonstrations, laboratory experiments, and recitations, the student is familiarized with the structure and character of drugs and with pharmaceutical preparations. He observes and experimentally determines the physiologic action of drugs; learns the principles and is drilled in the practice of prescription writing; discusses the indications of therapeutic use, and by the bedside and in the dispensary service applies this knowledge under the direction of clinical instructors.

Reference libraries are accessible to the students for purposes of collateral reading.

PHYSIOLOGY

1. General Cellular Physiology Drs. BEARD, SCOTT, GIBSON, and GULICK

Two lecture and recitation periods, four laboratory periods; third year, third quarter.

The study of the physiologic components of the animal body; the physiologic and physical properties of the tissue-cells in general; the specializations of function; the nutritive media, including methods of blood examination.

2. The Musculo-Nervous Mechanisms Drs. BEARD, SCOTT, WILCOX, GULICK, and MACFARLAND

Two lecture and recitation periods, four laboratory periods; third year, third quarter.

The study of the physiologic chemistry of nerve and muscle tissues; the phenomena of muscle and nerve action; the principles of nerve control in general; the nature of stimuli and the phenomena of stimulation.

3. Systemic Physiology Drs. BEARD, SCOTT, GIBSON, GULICK, and MACFARLAND

Three lecture and recitation periods, four laboratory periods; third year, fourth quarter.

The vascular mechanism, including the estimation of blood-pressure, the mapping of cardiac areas, the study of heart sounds, and the making of sphygmograms. The digestive system, including the process of secretion, the analysis of the digestive fluids, the examination of the normal stomach contents, and the conduct of digestion.

4. Systemic Physiology (Continued) Drs. BEARD, SCOTT, GIBSON, GULICK, and MACFARLAND

Three lecture and recitation periods, four laboratory periods; fourth year, first quarter.

The respiratory mechanisms; the mechanics, physics, chemistry, and nerve control of respiration. The excretory system, including the study of excretion by the air passages, the intestinal tract, the skin, and the kidney. Analysis of the physiologic urine is addressed both to the determination of functional facts and to the attainment of the technique of clinical diagnosis in this field.

5. Metabolism and Nutrition Drs. BEARD, SCOTT, GIBSON, GULICK, and MACFARLAND

Two lecture and recitation periods, four laboratory periods; fourth year, first quarter.

A study of metabolic and nutritional problems for the determination of nutritive balance, nitrogenous and body equilibrium, and specific dietetic results; including the analysis of standard dietaries and the further examination of the normal stomach contents and the fecal debris, the estimation of nitrogen excretion in total and differential forms, the relation of fat splitting and fat absorption, and the determination of respiratory quotients, etc.

6. The Physiology of Development Drs. BEARD and GULICK

One lecture and recitation period, two laboratory periods; fourth year, second quarter.

A study of the physiology of the ovum, the embryo, and the fetus; of birth, infancy, childhood, puberty, menstruation, ovulation, pregnancy, parturition, maturity, and old age.

7. The Physiology of Special Sense Organs Drs. BEARD, WILCOX, SCOTT, GULICK, and MACFARLAND

Two lecture and recitation periods, four laboratory periods; fourth year, second quarter.

A study of the phenomena and conditions of special sense function and of the means of determining its acuity, range, etc.

8. The Physiology of the Central Nervous System Drs. BEARD and SCOTT

Two lecture and recitation periods, and four laboratory periods; fourth year, second quarter.

A study of the functions of the nervous system in general, including the functional relations of nerve tracts, association paths, and central localization.

9. The Metabolism of Infancy Drs. SEDGWICK and SCHLUTZ Elective.

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| 10. The Regulation of Respiration
Elective. | Dr. SCOTT |
| 11. The Physiology of Accommodation
Elective. | Dr. WILCOX |
| 12. The Metabolism of Sugars
Elective. | Dr. GIBSON |

Text-Books, First and Second Year.—Howell's Text-book of Physiology; Foster's Physiology, Sixth English Edition; Abderhalden's Physiologic Chemistry.

Collateral Reading.—The American Text-book of Physiology; Hammarsten's Physiologic Chemistry; Von Noorden's Text-book of Metabolism; Stewart's Manual of Physiology; Tigerstedt's Physiology; Blyth's Foods and their Composition; Friedenwald and Ruhr's Diet in Health and Disease; Ott's Text-book of Physiology; Hutchinson's Applied Physiology; and Lusk's Science of Nutrition.

PHARMACOLOGY

1. Elementary Pharmacy, General Toxicology, and Principles of Prescription Writing Drs. BROWN and DIGHT

Eight hours lecture or recitation per week; fourth year, fourth quarter.

The course includes the following subdivisions:

(a) Elementary pharmacy; the gross, microscopic, and chemical structure of drugs; weights and measures; pharmaceutic processes; and classes of pharmaceutic preparations.

(b) General treatment of poisoning; principles of prescription writing and incompatibilities; principles and rules of incompatibility; rules for solubility; construction of prescriptions; grammar and phrases of prescription-Latin, with class practice in writing simple prescriptions; use and materia medica of flavors.

(c) Materia medica is studied from the crude drugs and pharmaceutic preparations taken from the museum of material medica to which the students have access at all times.

2. General Pharmacodynamics (Experimental) Drs. BROWN and DIGHT
- Nine hours per week; fourth year, fourth quarter.

Experiments on cold-blooded and warm-blooded animals, illustrating the action of drugs and the methods of pharmacologic experimentation. The class is divided into sections and these sections into groups of three to six students, each group performing experiments in the same line, but by modified methods on different drugs having a similar pharmacologic action. The results are discussed at conferences, and the conclusions arrived at from the sum of the results. The knowledge thus obtained is by direct observation and serves to impress the student with the actions of drugs, and prepares him for the systematic didactic courses given in the third year.

The experimental course includes the following subdivisions:

(a) Actions of drugs on tissues outside the body, corrosives, hemoglobin, osmosis, etc.

(b) Exercises on intact mammals, absorption and excretion of drugs; racial idiosyncrasy; treatment of poisoning; emetics; convulsants and depressants; pulse, pupils; salivation, etc.

(c) Exercises on frogs, convulsants, central depressants, local anesthetics, on striped and cardiac muscles, cardiac nerves, etc.

(d) Operative work on mammals, general anesthetics, the effects of important drugs on blood pressure, respiration, oncometric and myocardiographic work, diuresis, peristalsis, perfusion of excised organs, isolated heart, etc.

3. Systemic Pharmacology, Toxicology, Materia Medica, and Therapeutics Dr. BROWN

Two hours lecture and recitation per week; fifth year, throughout the year.

This course is the principal didactic course given in the department. The instruction is given by lectures and recitations. Each drug or group of drugs is studied in detail under the following subdivisions:

(a) *Pharmacodynamics*. The effects of drugs are studied from the experimental and clinical evidence. Constant reference is made to the results obtained in the experimental course (Course 2).

(b) *Toxicology*. Symptoms and treatment of poisoning.

(c) *Materia Medica*. The student is required to be able to identify the more important drugs, learn their physical characters, uses, etc.

(d) *Therapeutics*. The conditions in which the drugs are rationally indicated or in which their empirical use has been found of value.

4. Prescription Writing

Two hours lecture and recitations per week; fifth year, throughout the year.

Hypothetical cases are given and the student is required to write a prescription for the treatment, using the proper drugs which have already been covered in the text.

5. Practical Pharmacy

Dr. WULLING

Three laboratory and lecture hours per week; fifth year, first quarter.

1. U. S. Pharmacopoeia.

(a) Metrology.

(b) Grades of drugs in use.

(c) Pharmacopoeial requirements as to purity.

2. Identity and impurities with U. S. Pharmacopoeial tests of six official substances.

3. Dispensing.

(a) The prescription.

(b) Compounding of prescriptions calling for the preparation of fourteen types of pharmacopoeial preparations.

6. Therapeutic Conferences

Dr. CONDIT

One hour weekly; sixth year, first and second semesters. Required of all seniors.

Conferences on assigned topics to be prepared by students from the point of view of literature and current clinic records, will be conducted weekly.

These will include the therapy of some of the common diseases and also the varied application of some of the common drugs and methods.

Text-Books: Sollmann, Pharmacology, Materia Medica and Therapeutics; Ortnier, Treatment of Internal Diseases; Forchheimer, The Prophylaxis and Treatment of Internal Diseases.

Collateral Reading.—U. S. Pharmacopoeia; Thornton, Dosebook and Manual of Prescription Writing; National Dispensatory; National Formulary.

DEPARTMENT OF CHEMISTRY

GEORGE B. FRANKFORTER, M.A., Ph.D., Professor of Chemistry and
Director of the Department

IRA HARRIS DERBY, Ph.D., Assistant Professor of Chemistry

EVERHART P. HARDING, M.S., Ph.D., Assistant Professor of Chemistry

JOHN A. HANDY, Phm.C., B.S., Instructor in Chemistry

WILLIAM H. HUNTER, Ph.D., Instructor in Chemistry

(Courses in general and advanced general chemistry and qualitative analysis are required for entrance to this College and must precede the instruction in Courses 1 and 2 listed below. See Bulletin of the College of Science, Literature, and the Arts and p. 18 this Bulletin.)

1. Organic Chemistry

Dr. FRANKFORTER

Six hours per week; third year, first semester. Open to those who have completed courses in general and qualitative chemistry.

Lectures and laboratory work. The course includes an exhaustive study of the theories of organic chemistry, with one or more important preparations in each of the advanced series and groups of compounds.

2. Toxicology and Hygiene Drs. FRANKFORTER, HARDING, and DERBY
Third year, first semester.

Toxicology. This course includes the general methods for the separation and identification of the poisons both organic and inorganic. Attention will be given to the identification of poisons associated with medicines and with vegetable and animal matter. Besides this qualitative and quantitative work, attention is given to the structure of those organic groups of compounds which have poisonous properties.

Hygiene. Chemistry lectures and laboratory work. This course includes the chemical analysis of air, water, and some of the common foods, milk, sugar and fruit products. Special attention is given to food adulteration and to food preservatives.

For work in other special or technical lines of chemistry, numerous courses are offered (see Bulletin of the School of Chemistry). Facilities for research work are also afforded in a large number of lines.

The analysis of the urine is dealt with under physiologic chemistry in the Department of Physiology, in the pathology of the urinary system in the Department of Pathology, and in the clinical laboratories in connection with the microscopy of the urine.

DEPARTMENT OF PATHOLOGY AND BACTERIOLOGY

FRANK F. WESBROOK, M.A., M.D., C.M., Professor of Pathology and Bacteriology and Director of the Department

HAROLD E. ROBERTSON, B.A., M.D., Associate Professor of Pathology and Bacteriology and Pathologist to the University Hospitals

ROBERT H. MULLIN, B.A., M.B., Associate Professor of Pathology and Bacteriology

LOUIS B. WILSON, M.D., Assistant Professor of Clinical Pathology

E. T. BELL, B.S., M.D., Assistant Professor of Pathology and Bacteriology

J. FRANK CORBETT, B.S., M.D., Associate Professor of Experimental Surgery

ARTHUR S. HAMILTON, B.S., M.D., Instructor in Pathology of the Nervous System

FRED L. ADAIR, B.S., M.D., Instructor in Obstetrics and Gynecology

CHARLES R. DRAKE, M.D., Demonstrator in Pathology and Bacteriology and Assistant Pathologist, University Hospitals

GUSTAV A. MAGNUSON, M.D., Demonstrator in Pathology and Bacteriology

WILLIAM C. JOHNSON, B.A., M.D., Demonstrator in Pathology and Bacteriology

WINFORD P. LARSON, M.D., Demonstrator in Pathology and Bacteriology

THOMAS P. ROTHNEM, Assistant in Pathology, University Hospitals

LEE POLLOCK, B.S., Departmental Laboratory Assistant

The Institute of Public Health and Pathology, to which attention has already been directed, provides adequate room and facilities for teaching and research in Pathology, Bacteriology, and Public Health.

The main laboratory, 56 by 75 feet, lighted on three sides and by a skylight, is used for the general or required courses. It is divided into twelve loges, each fully and independently equipped in every detail for the use of six students who are responsible for all equipment therein contained. A combined lecture and autopsy room opens both from the main laboratory and from the hall so that autopsies, lantern demonstrations, or lectures may be given during the period devoted to the laboratory exercises without interference with the practical work.

A smaller laboratory, one-half the size of the main laboratory, is used for special work in graduate and elective courses in the diagnosis of tumors, pathology of the nervous system, practical public health, etc. The same loge arrangement obtains as in the main laboratory.

The hospitals in which members of the staff are working afford a large supply of material and frequent opportunities for post-mortem examinations. From many institutions and physicians throughout the State, valuable and interesting gross and microscopic materials are received from time to time and are made available in the museum and for microscopic use in class.

The State Board of Health Laboratory Division, including the Pasteur Institute for the study and treatment of rabies, is located in the building. This affords an abundance of illustrative material for public health, pathology, and bacteriology.

A full equipment of microscopes permits of the rental of an instrument to each student, if he is not provided with one suitable for his purpose.

Methods of Instruction

In this department the center around which all instruction is grouped is constituted by the student's own personal practical experience in the laboratories and at autopsies. This is supplemented and co-ordinated by lectures, laboratory, and lantern demonstrations, and by recitations as required.

1. General Bacteriology Drs. MULLIN, LARSON, and MAGNUSSON Fourth year, first quarter.

Lectures and demonstrations. The general scope of bacteriology, the history of its development and the biological and chemical problems involved in the life history of bacteria are presented.

The classification of the various bacterial forms, the methods of isolation and culture, and the composition and manufacture of culture media are studied until a thorough knowledge of technique is acquired. General and special study of the various antiseptics, disinfectants, and bactericidal substances and conditions is undertaken.

Laboratory work, involving the making of their own culture media by the students, the study of bacteria in cultures and under the microscope, technique of staining and other methods, including observations of chemical and biological peculiarities, is thoroughly covered. Testing of various germicides, chemical and physical, and the use of bacteriological methods in the examination of drinking water form an important part of the work. Bacterial activities concerned in sewage purification, etc., receive attention.

2. General Pathology Drs. ROBERTSON, BELL, and JOHNSON Fourth year, second quarter.

Lectures, demonstrations, and laboratory work on the general processes involved in disease, which include:

(a) Inflammation. The comparative features of cell reaction to various irritants are carefully studied throughout a variety of tissues and animals. As soon as familiarity with cell reaction is assured, the inflammatory processes in the various organs and systems are studied.

(b) Regeneration not already dealt with under inflammation is illustrated by specimens especially prepared from experimental animals and from clinical and autopsy material.

(c) Inflammatory reactions and pathological processes dependent upon the activities of the circulatory system, including metastasis, thrombosis, embolism, infarction, etc., are systematically studied.

(d) Degeneration. The theories as to causation and the chemical processes involved are presented on the basis afforded by experimental work, together with illustrative clinical material.

(e) The general physical, chemical, and biological processes involved in immunity are presented, together with practical and illustrative work on the precipitins, agglutinins, opsonins, etc. The pathology of fever is also fully given.

(f) The theories of causation, the general principles involved, and the classification of tumors are illustrated by a carefully selected assortment of the various types.

3. Pathology of Special Diseases (includes Bacteriology) Drs. WESBROOK, ROBERTSON, MULLIN, BELL, LARSON, JOHNSON, and MAGNUSSON Fourth year, second semester.

Disease processes are grouped, so far as practicable, according to their etiology. Instruction is afforded by means of lectures, demonstrations of museum specimens and preparations, and laboratory work on materials secured from clinical cases and at autopsy.

The course consists of instruction in

A. Pathology of infectious diseases.

(a) Special bacteriology of the infectious diseases with the cultivation in the various media of all the important pathogenic bacteria, prepared and kept under observation by each student. Fluids and tissues from clinical cases and autopsies (human and animal) are supplied for microscopic and cultural examination, and an intimate relationship with clinical pathological work maintained.

(b) Special pathology of the infectious diseases. Concurrently with the bacteriology and parasitology of each of the diseases, the pathology of each infection is studied.

The important gross and microscopic lesions in all the organs are illustrated from clinical and autopsy material, fresh and preserved, and supplemented by experimental work. Each student is required to prepare and examine under the microscope selected fresh and stained specimens of morbid tissues, fluids, etc.

B. Pathology of diseases of toxic and obscure origin. Under this are included the special degenerations, inflammations, and other pathological conditions not already dealt with under infectious diseases.

4. Clinical Pathology Drs. ROBERTSON, DRAKE, and JOHNSON Fifth year, first quarter. Required of all students.

The course includes:

(a) The urine; a macroscopical study of its colors and sediments, and the microscopical study of blood, pus, epithelial casts, etc., in the urine of disease.

(b) The blood; the counting of red and white cells in the blood, the estimation of hemoglobin, the making of blood smears, and the fixing, staining, mounting, and study of all forms of normal and pathological red and white blood cells. In this course students are given specimens of blood from cases of pernicious anemia, myelogenous leukemia and lymphatic leukemia, for study.

(c) Stomach contents; the macroscopical, chemical, and microscopical study of gastric contents in various diseases of the stomach, with special reference to differential diagnosis, by lectures and demonstrations.

(d) Exudates and transudates in various diseases of the pleura and peritoneum.

During the fifth and sixth years laboratory facilities are provided so that students themselves, under the supervision and direction of one of the staff, examine material obtained from cases observed in clinics at the various hospitals.

5. Autopsies

Drs. ROBERTSON, BELL, DRAKE, and JOHNSON

Required in fifth and sixth years.

The fifth and sixth year classes are divided into sections similar to those for clinics. Such sections are called in rotation to each autopsy where the students are required to take an actual part in the examinations under the direct supervision of the pathologist in charge. The work consists of a review of the clinical history, methods of section, study and description of gross specimens. Each student is required to attend at least two autopsies during each year.

6. Surgical Pathology

Dr. CORBETT

Fifth year, second quarter.

A demonstration laboratory course covering the subject of surgical inflammations. Abnormal conditions are demonstrated by gross and microscopic preparations from clinical cases and experimental sources and where possible the actual lesion in the living subject.

7. Laboratory Course on Tumors

Dr. CORBETT

Fifth year, second semester.

This course includes the comprehensive study of tumors, with the view of giving the student a knowledge of the methods employed in the laboratory diagnosis of this class of pathological conditions and familiarizing him with the characters of the common as well as the rarer types. It is intended to supplement the course on the surgery of tumors by Dr. Stewart.

The work consists of combined study of microscopical sections and gross tumors with their clinical histories, illustrated also by photographs and lantern slides.

8. Pathology of the Nervous System

Dr. HAMILTON

Fifth year, fourth quarter.

So far as possible, the clinical history, autopsy notes, gross specimens, and sections stained by various special methods will be presented of individual cases representing the principal organic diseases of the nervous system.

9. Obstetric and Gynecologic Pathology (laboratory course) Dr. ADAIR

Elective for twelve students.

Course in gross and microscopic pathology of the female generative organs, placenta, membranes, and fetus.

Both anatomical and chemical pathology of diseases peculiar to the pregnant and non-pregnant female will be studied.

10. Pathological Diagnosis and Technique

Dr. ROBERTSON

Elective. Limited to ten students of the junior year.

Students participate in autopsies, and themselves prepare and examine material from autopsies and operations for final report and record. They thus are able to provide themselves with a set of selected permanent specimens and learn how to describe processes, write reports, and correlate and record results of value to the clinician.

Students become familiar with the various physical, chemical, and staining methods used in modern pathology and gain a knowledge of the preparation of gross and microscopic specimens for demonstration, museum, class, and medical society work. Each reviews the literature of some one or more important pathological process.

11. Public Health Laboratory Technique

Elective.

This course allows the student to become thoroughly familiar with the technique ordinarily employed in a public health diagnostic laboratory. The routine examination of diphtheria and sputum and the Widal test receive considerable attention. In addition the Pasteur treatment for rabies and the methods employed in the sanitary examination of water are demonstrated. Examinations made for other infectious diseases are also shown.

12. Advanced Bacteriological Technique and Special Problems

Elective.

This course affords the student an opportunity of studying bacteriological technique in greater detail than can be given in the required course. It deals with special methods of isolation of particular pathogenic species of bacteria, together with special means for their cultivation. It necessitates the bacteriological study of feces, urine, sputum, exudates, etc.

13. Immunity

Elective.

This course gives the student an introduction to the facts of immunity in a practical manner by the study of natural and acquired immunity. Students conduct experiments to show the different types of protective substances mentioned in the theories of immunity and become familiar with the principles and technique of the modern laboratory methods of serum diagnosis.

14. Research Work in one of the following lines

Second semester of fifth and throughout the sixth year, hours assigned.

(a) General pathology and bacteriology.

(b) Special pathology and bacteriology.

Text-Books.—*Pathology.*—Adami, Inflammation; Delafield and Prudden, Handbook of Pathological Anatomy and Histology; American Text-book of Pathology; Ziegler, General and Special Pathology; Coplin, Manual of Pathology; Cattel, Post-Mortem Pathology; Durck-Hektoen, Special Pathologic Histology; Jakob, Nervous System; Mallory and Wright, Pathological Technique.

Collateral Reading.—Adami, Principles of Pathology; Woodhead, Practical Pathology; Thomas, Text-book of General Pathology; Lubarsch Ostertag, Ergebnisse der Pathologie u. Anatomie; Orth, Pathologische Anatomie; Birch-Hirschfeld, Pathologische Anatomie; Osler, Modern Medicine; Clifford Allbutt, System of Medicine; Leukhart, Die Thierische Parasiten des Menschen; Bouchard, Traite de Pathologie Generale; Von Noorden, Metabolism and Practical Medicine.

HYGIENE

The very closest relations have always existed between the Minnesota State Board of Health and the University of Minnesota. Members of the State Board of Health staff have also been teachers in the University of Minnesota.

The main laboratories of the Minnesota State Board of Health, and the offices of the Epidemiologist and of the Engineer of the Board, are located in the Institute of Public Health and Pathology. Thus practical men are available as teachers; the practical sanitary work conducted affords the best illustrative teaching material. Members of the staffs of the municipal boards of health of Minneapolis and St. Paul are also on the teaching staff of this college, affording, in addition, illustrative material in municipal hygiene.

Members of the staffs of the Agricultural College, the School of Chemistry, the Department of Economics, the Department of Biology, the College of Education, and the Department of Sanitary Engineering of the University, are all employed in the teaching of medical students.

It is planned that other courses of instruction in relation to personal hygiene and public health will be given to all students of the University, and in addition to the special courses provided already for municipal and

sanitary engineers, other courses will be available for the College of Education, School of Chemistry, and for such students as require a knowledge of special phases of public health.

A graduate course for medical health officers will be announced later.

For medical students, attempt is made to follow the outline prepared by the Committee on Hygiene, Medical Jurisprudence, and Medical Economics of the Council on Medical Education of the American Medical Association. The development of this course is facilitated by the relationships above mentioned and by the co-operation of the various other state institutions, boards, and associations.

The College is indebted to the following for special instruction, viz:

- J. M. ARMSTRONG, M.D., Assistant Commissioner of Health, St. Paul;
Clinical Assistant in Genito-Urinary Diseases
- L. B. BALDWIN, M.D., Superintendent, University Hospitals
- W. B. BANNISTER, M.D., Lieutenant Colonel U. S. Army, Ft. Snelling
- F. H. BASS, B.S., Professor of Sanitary and Municipal Engineering, and
Director, Engineering Division, Minnesota State Board of Health
- R. O. BEARD, M.D., Professor of Physiology and Director of the Department
of Physiology and Pharmacology
- W. L. BEEBE, D.V.M., Bacteriologist, State Live Stock Sanitary Board,
St. Paul
- ROY BLAKEY, B.A., In charge of State Board of Health, Tuberculosis
Exhibit
- A. J. CHESLEY, M.D., Epidemiologist, Minnesota State Board of Health
- J. J. DOW, Superintendent, Minnesota State School for the Blind, Fair-
bault
- CHRISTOPHER EASTON, Executive Secretary, The Minnesota Association
for the Prevention and Relief of Tuberculosis, St. Paul
- J. T. GEROULD, B.A., Librarian, University of Minnesota
- CHARLES L. GREENE, M.D., Professor and Chief of the Department of
Medicine
- T. L. HAECKER, Professor of Dairy Husbandry and Animal Nutrition,
College of Agriculture
- JOHN M. HURTY, M.D., Secretary State Board of Health, Indianapolis,
Indiana
- CHARLES H. KEENE, M.D., Supervisor, Hygiene and Physical Training,
Minneapolis Public Schools
- F. D. KETCHUM, B.S., U. S. Food Inspector, South St. Paul
- A. T. LAIRD, M.D., Secretary, St. Louis County Tuberculosis Association;
Superintendent, St. Louis Sanatorium for Tuberculosis, Duluth
- EUGENE T. LIES, B.S., General Secretary, Minneapolis Associated Char-
ities
- W. J. MARCLEY, M.D., Late Superintendent, State Sanatorium (for
Tuberculosis), Walker, Minn.; Secretary, Tuberculosis Commis-
sion, Minnesota State Board of Health
- R. H. MULLIN, B.A., M.B., Director of Laboratory Division, Minnesota
State Board of Health; Associate Professor of Pathology and
Bacteriology

- KENT NELSON, M.D., Major U. S. Army Medical Corps
 ALFRED OWRE, B.A., M.D., C.M., D.M.D., Dean of the College of Dentistry
 Miss M. PATERSON, Head Nurse, Associated Charities, Minneapolis
 A. W. RANKIN, B.A., Professor of Education, University of Minnesota
 A. C. ROGERS, M.D., Superintendent, State School for the Feeble-Minded, Faribault
 Hon. C. G. SCHULZ, Superintendent, Department of Public Instruction, St. Paul
 Hon. GEORGE T. SIMPSON, Attorney General, St. Paul
 HALDOR SNEVE, M.D., Clinical Professor of Nervous and Mental Diseases
 J. N. TATE, Superintendent, Minnesota State School for the Deaf, Faribault
 H. A. TOMLINSON, M.D., Superintendent of State Hospital for the Insane, St. Peter
 E. L. TUOHY, B.A., M.D., Chief, Branch Laboratory, Minnesota State Board of Health, Duluth, Minn.; Chairman, Tuberculosis Commission, Minnesota State Board of Health; Chairman, Tuberculosis Commission, St. Louis County
 H. L. ULRICH, B.S., M.D., Instructor in Clinical Medicine, University of Minnesota, Minneapolis.
 F. F. WESBROOK, M.A., M.D., C.M., Dean, Professor and Director of the Department of Pathology and Bacteriology
 LOUIS B. WILSON, M.D., Assistant Professor of Clinical Pathology, Director of Laboratories, St. Mary's Hospital, Rochester, Minn.

DEPARTMENT OF MEDICINE

- CHARLES LYMAN GREENE, M.D., Professor of Medicine and Chief of the Department
 HENRY L. STAPLES, M.A., M.D., Clinical Professor of Medicine
 THOMAS S. ROBERTS, M.D., Clinical Professor of Pediatrics
 JAMES T. CHRISTISON, M.D., Professor of Pediatrics
 LOUIS A. NIPPERT, M.D., Clinical Professor of Medicine
 GEORGE D. HEAD, B.S., M.D., Associate Professor of Medicine
 WALTER R. RAMSEY, M.D., Clinical Professor of Pediatrics
 GEORGE E. SENKLER, M.D., Clinical Professor of Medicine
 S. MARX WHITE, B.S., M.D., Associate Professor of Medicine
 SOREN P. REES, B.S., M.D., Clinical Professor of Medicine
 JOHN GROSVENOR CROSS, B.S., M.D., Clinical Professor of Medicine
 JAMES GILFILLAN, M.D., Clinical Professor of Medicine
 WALTER D. SHELDEN, B.S., M.D., Clinical Professor of Medicine
 LESLIE O. DART, M.D., Clinical Instructor in Pediatrics
 PEDER A. HOFF, M.D., Clinical Instructor in Medicine
 HENRY L. ULRICH, B.S., M.D., Clinical Instructor in Medicine
 THOMAS W. STUMM, M.D., Clinical Instructor in Medicine
 CHARLES H. BRADLEY, M.D., Clinical Instructor in Medicine
 C. NAUMANN MCCLOUD, M.D., Clinical Instructor in Pediatrics

CHARLES J. MEADE, M.D., Clinical Instructor in Medicine
 HENRY T. NIPPERT, M.D., Clinical Instructor in Medicine
 HENRY W. COOK, B.A., M.D., Clinical Instructor in Medicine
 JULIUS PARKER SEDGWICK, B.S., M.D., Assistant Research Professor in
 Physiologic Chemistry and Clinical Instructor in Pediatrics
 CHARLES B. WRIGHT, B.A., M.D., Clinical Instructor in Pediatrics
 FRANK S. BISSELL, M.D., Clinical Instructor in Medicine
 JOHN E. HYNES, Ph.C., M.D., Clinical Instructor in Medicine
 ERNEST T. F. RICHARDS, M.D., C.M., Clinical Instructor in Medicine
 FREDERIC W. SCHLUTZ, M.D., Instructor in Pediatrics
 WILLIAM H. AURAND, M.D., Clinical Assistant in Medicine
 EDWARD MOREN, M.D., Clinical Assistant in Medicine
 LEVERETT D. BRISTOL, B.S., M.D., Clinical Assistant in Medicine
 EDGAR J. HUENEKENS, B.A., M.D., Clinical Assistant in Medicine
 OLIVER R. BRYANT, M.D., Clinical Assistant in Medicine
 ROBERT WILLIAMS, B.A., M.D., Clinical Assistant in Medicine
 ERNEST L. BAKER, M.D., Clinical Assistant in Medicine
 JOHN C. BROWN, B.A., M.D., Clinical Assistant in Medicine
 WILLIAM D. BEADIE, M.D., C.M., Clinical Assistant in Pediatrics
 JAMES F. HAMMOND, M.D., C.M., Clinical Assistant in Pediatrics
 HERBERT G. LAMPSON, M.D., Assistant in Clinical Pathology
 CHELSEA C. PRATT, M.D., Clinical Assistant in Medicine
 F. A. OLSON, B.A., M.D., Research Assistant in Medicine

Departmental Office in Millard Hall

GENERAL MEDICINE

Fourth Year.—Instruction in Medicine begins in the second semester of the fourth year with courses in elementary physical diagnosis, case taking, and general symptomatology, occupying one hour daily in the fourth quarter.

This work includes lectures, quizzes, and bedside demonstrations.

Fifth Year.—During the fifth year the student receives systematic instruction, by means of didactic lectures, recitations, and written quizzes, in the acute infections, diseases of all the important organs of the chest and abdomen, the blood and ductless glands, and the alimentary tract.

These courses occupy six hours per week during the school year.

Sixth Year.—The courses in Medicine of the sixth year comprise instruction in constitutional diseases and intoxications, animal parasites, tropical diseases, life insurance examinations, case analysis, etc.

Three hours weekly throughout the sixth year are devoted to these courses.

The sixth year's work in the classroom consists chiefly of the analysis of actual case histories by the members of the class, supplemented by explanatory remarks by the instructors and when possible by the presentation of patients and the demonstration of autopsy material.

Clinics.—In addition to the didactic courses previously outlined, the fifth and sixth year students are required to devote two entire days each week in attendance at clinics in the hospitals and free dispensaries of Minneapolis and St. Paul.

Sixth-year students are also assigned daily in small sections to the University Hospital for ward work, and to the University Free Dispensary for practical instruction in case taking, physical diagnosis, etc.

Small sections of sixth-year students may be assigned for given periods of time to make the general hospital rounds with the Chief of Staff. Such general rounds require the attendance of all staff physicians on duty, as well as the laboratory representatives, and offer unusual opportunities to the student.

Seminar Work.—Seminar work is also given in the fifth and sixth years at the University Dispensary for the purpose of studying the various stages and varying types of the same disease and the effects of treatment. Cases presented at this seminar are selected from all of the medical material of the Dispensary.

Sixth-year students are required to prepare short theses upon such medical subjects as may be assigned by the instructor, which are discussed at the seminar.

Tests and Practical Examinations.—At the end of each of the courses of the fourth, fifth and sixth years, test examinations are held and practical clinical examinations are required monthly during the fifth and sixth years, these being supplemented by general written examinations at the end of each year.

Clinical Laboratory Work.—Medical pathology, including systematic application of laboratory methods to diagnostics, is taught in the pathological laboratory during the second semester of the fourth year, and laboratory teachers co-operate with the teaching staff in the lecture rooms, the University Hospitals and Dispensary, and the City Hospitals of Minneapolis and St. Paul.

Six-year students are assigned daily in small sections to the clinical laboratories of the University Hospitals where examinations of urine, blood, sputum, and stomach contents are made under competent instructors.

Every effort is made to present the available clinical material in such a manner that the student shall be brought into actual contact with the cases studied, ascertain for himself both clinical and laboratory data, and thus work out the diagnostic features of each case by logical and systematic methods of study. Furthermore, the student is constantly drilled in case taking, physical diagnosis, the use of diagnostic instruments of precision, and applied clinical pathology at the bedside.

Instruction in pediatrics is wholly clinical after the fifth year, and an abundance of material is found in the Twin City Hospitals and Dispensaries.

1. Elementary Physical Diagnosis Dr. REES
Three lectures and recitations per week, six weeks; fourth year, fourth quarter.
2. Case Taking and General Symptomatology Dr. SHELDEN *
Three lectures and recitations per week, six weeks; fourth year, fourth quarter.
3. Diseases of Heart and Blood Vessels Dr. GREENE
Two lectures and recitations per week; fifth year, first quarter.
4. Diseases of the Bronchi, Lungs, and Pleura Dr. REES
Two lectures and recitations per week; fifth year, first quarter.
5. Gastric Ailments Dr. WHITE
Two lectures and recitations per week; fifth year, second quarter.
6. Diseases of the Kidney Dr. NIPPERT
One lecture and recitation per week; fifth year, second quarter.
7. Acute Infectious Diseases Dr. CROSS
One lecture and recitation per week; fifth year, second quarter.
One lecture and recitation per week; fifth year, third quarter.
One lecture and recitation per week; fifth year, fourth quarter.
8. Diseases of the Intestinal Tract, Liver, Pancreas, Spleen, and Peritoneum Dr. GILFILLAN
Two lectures and recitations per week; fifth year, third quarter.
9. Diseases of the Blood and Ductless Glands Dr. HEAD
One lecture and recitation per week; fifth year, third quarter.
10. Diseases of Children Dr. CHRISTISON
Two lectures and recitations per week; fifth year, third and fourth quarters.
11. Systematic Quizzes Reviewing the Work of the Year Drs. GREENE, NIPPERT, HEAD, WHITE, REES, CROSS, and GILFILLAN
Fifth year, throughout.
12. Case Analysis
Two exercises per week; sixth year.
First quarter Drs. HEAD and WHITE
Second quarter Drs. GREENE and HEAD
Third quarter Drs. GREENE and WHITE
Fourth quarter Drs. WHITE and CROSS
The classroom work of the sixth year in Medicine consists principally of case analysis (using actual case histories), with short explanatory talks by the instructors, together with seminar work, etc.

13. Constitutional Diseases and the Intoxications Dr. SHELDEN
One lecture and recitation per week; sixth year, first quarter.
14. Tropical Diseases and Diseases Due to Certain Animal Parasites Drs. ULRICH and CROSS
One lecture and recitation per week; sixth year, second and third quarters.
15. The Examination for Life Insurance Dr. COOK
One lecture and recitation per week; sixth year, fourth quarter.
16. Clinical Course in the Diseases of Children Drs. ROBERTS, SEDGWICK, DART, and WRIGHT
Four hours per week, fifth and sixth years, at Minneapolis City Hospital, Children's Home, other hospitals, and the University Free Dispensary.
17. Clinical Course in the Diseases of Children Drs. CHRISTISON and RAMSEY
Four hours per week, fifth and sixth years, at St. Paul City and County Hospital, and St. Paul Free Dispensary.
18. Medical Pathology
Combined laboratory and bedside course under the Departments of Medicine and Pathology. (See Course 4 under Department of Pathology and Bacteriology.)
19. Physical Diagnosis
In addition to the systematic instruction given under Course 1, the topic is further developed and applied in the University Hospitals and Dispensary, the public hospitals of the Twin Cities, and in special clinical lectures and section clinics.
The classroom courses dealing with diseases of the thorax and abdomen, further emphasize and apply the various methods of diagnosis, whether physical, instrumental, chemical, or microscopic.
20. General Medical Clinics
 - (a) Senior students, regularly assigned in sections for a definite period to act as clinical clerks, visit the University Hospitals daily, take case histories and follow closely and report upon the individual patients to whom they are specifically assigned.
 - (b) Section clinics are held daily in the University Hospitals and University Dispensary.
 - (c) Section clinics and occasional clinical lectures occupy the entire afternoon and part of the forenoon on each Thursday and Saturday throughout the entire fifth and sixth years.
 - (d) Special tuberculosis clinics are held at the special tuberculosis out-patient clinics and in the Thomas Hospital.

A detailed statement of the clinics of the present year appears on pages 70 to 74 and will illustrate the methods employed in scheduling the work.

Text-Books.—Greene, Medical Diagnosis; Butler, Diagnosis; Cabot, Physical Diagnosis; Da Costa, Physical Diagnosis; Wilson, Medical Diagnosis; Musser, Medical Diagnosis; Hare, Diagnosis; Leube, Special Medical Diagnosis; Osler, Practice; Edward, Practice of Medicine; French, Practice of Medicine; Tyson, Practice of Medicine; Mering, Lehrbuch der Innere Medizin; Anders, Practice of Medicine.

Reference Books.—Osler, Modern Medicine; Allbutt, System; Ebstein und Schwalbe, Handbuch; Gibson, Practice of Medicine; Mackenzie on the Heart; Babcock on the Heart; Gibson on the Heart and Aorta; Boas on the Stomach and Intestines; Zweig, Magen und Darmkrankheiten; Bourget, Die Krankheiten des Magens; Greene, Examination for Life Insurance; Cornet; Eichhorst; Manson, Tropical Diseases; Ker, Infectious Diseases.

Therapeutics.—Forchheimer, Prophylaxis and Treatment; Croftan, Clinical Therapeutics; Ortnier, Treatment of Internal Diseases; Yeo, Manual of Treatment; Hutchinson and Collier, Index of Treatment; Wilcox, the Treatment of Disease; Hare, Practical Therapeutics; Eichhorst, Specielle Pathologie und Therapie.

Diseases of Children.—Holt, Diseases of Children; Rotch, Pediatrics; American Text-book of Diseases of Children; Keating, Cyclopedia of Diseases of Children; Corlett, Acute Infectious Exanthemata; Chapin, Theory and Practice of Infant Feeding; Stengel, Nothnagel's Encyclopedia.

Medical Pathology.—Webster, Diagnostic Methods; Wood, Chemical and Microscopical Diagnosis; Sahli, Diagnostic Methods; Simon, Clinical Diagnosis; Hutchinson and Rainey, Methods; Emerson, Clinical Diagnosis; Nichol, Clinical Laboratory Methods; Boston, Clinical Diagnosis; Schleip, Atlas of Hematology; Cabot, Clinical Examination of the Blood; Da Costa, Clinical Hematology; Ewing, Pathology of the Blood; Dickson, The Bone Marrow; Ogden, Clinical Examination of the Urine; Braun, Animal Parasites of Man.

DEPARTMENT OF SURGERY

JAMES E. MOORE, M.D., Professor of Surgery and Chief of the Department

FREDERICK A. DUNSMOOR, M.D., Professor of Clinical Surgery

J. CLARK STEWART, B.S., M.D., Professor of Principles of Surgery

*MAX P. VANDER HORCK, M.D., Professor of the Diseases of the Skin and Genito-Urinary Organs

ARCHIBALD MACLAREN, B.A., M.D., Clinical Professor of Surgery

ARTHUR J. GILLETTE, M.D., Professor of Orthopedic Surgery

BURNSIDE FOSTER, B.A., M.D., Professor of Dermatology and Syphilology and Lecturer upon the History of Medicine

HENRY J. O'BRIEN, M.D., Clinical Professor of Surgery

JOHN T. ROGERS, M.D., Clinical Professor of Surgery

ARTHUR T. MANN, B.S., M.D., Clinical Professor of Surgery and Clerk of Clinics

HORATIO B. SWEETSER, M.D., Clinical Professor of Surgery

ANTON SHIMONEK, M.D., Clinical Professor of Surgery

WARREN A. DENNIS, B.S., M.D., Clinical Professor of Surgery

ALEXANDER R. COLVIN, M.D., Clinical Professor of Surgery

CHARLES A. ERDMANN, M.D., Professor of Gross and Applied Anatomy

J. FRANK CORBETT, B.S., M.D., Associate Professor of Experimental Surgery

FRANK R. WRIGHT, M.D., Clinical Professor of Genito-Urinary Diseases

ARTHUR A. LAW, M.D., Clinical Professor of Surgery

*JUDD GOODRICH, M.D., Clinical Instructor in Surgery

JOHN B. BRIMHALL, M.D., Clinical Instructor in Orthopedic Surgery

ROBERT E. FARR, M.D., Clinical Instructor in Surgery

CHARLES A. REED, B.S., M.D., Clinical Instructor in Orthopedic Surgery

*Deceased.

SAMUEL E. SWEITZER, M.D., Clinical Instructor in Dermatology and Genito-Urinary Diseases
 ARCHA WILCOX, M.D., Clinical Instructor in Surgery
 EMIL S. GEIST, M.D., Clinical Instructor in Orthopedic Surgery
 PAUL B. COOK, M.D., Instructor in Genito-Urinary Diseases
 EARLE R. HARE, B.S., M.D., Clinical Instructor in Surgery
 OSCAR OWRE, M.D., Clinical Instructor in Genito-Urinary Diseases
 HARRY P. RITCHIE, Ph.B., M.D., Clinical Instructor in Surgery
 FREDERICK H. POPPE, B.A., M.D., Clinical Instructor in Surgery
 ARTHUR C. STRACHAUER, M.D., Clinical Instructor in Surgery
 JOHN M. ARMSTRONG, M.D., Clinical Assistant in Genito-Urinary Diseases
 JOHN BUTLER, M.D., Clinical Assistant in Dermatology
 HARRY G. IRVINE, M.D., Clinical Assistant in Dermatology

Departmental Office in Millard Hall

The course in Surgery is graded in the fifth and sixth years. Examinations are held at the close of each of these years. Lectures and recitations are given by the teaching staff in surgery and clinics at the dispensaries and hospitals of Minneapolis and St. Paul by a large corps of instructors.

1. Surgical Pathology Dr. CORBETT

Five hours per week; fifth year, second quarter.

A demonstration laboratory course covering the subjects of surgical inflammations. Abnormal conditions are demonstrated by gross and microscopic preparations and experimental sources, and where possible by similar lesions on the living subject. (See also Course 6 under Pathology and Bacteriology.)

2. Principles of Surgery Dr. STEWART

Two lectures per week; fifth year, first semester.

Systematic discussion of the diseases and injuries of the bones and joints (except fractures and dislocations); injuries and diseases of the skin, lymphatics, blood vessels (including aneurism), and nerves; of the tendons, fasciae, and bursae. Lectures will be illustrated by lantern slides and demonstration of gross specimens.

Surgical Quiz (one hour per week) Dr. HARE

3. Surgical Technique Dr. MANN

Fifth year, first semester.

Lectures upon the principles of operative procedure; the preparation of patient, operator, and operating rooms; the principles of asepsis, antisepsis, and sterilization; ligatures and sutures; and the treatment of wounds.

4. Practice of Surgery Dr. MOORE

Two lectures and recitations per week; fifth year, second semester.
 Regional surgery; fractures and dislocations.

Surgical Quiz (one hour a week) Dr. HARE

5. Practice of Surgery Dr. MOORE

Lectures and recitations, two hours per week; sixth year, first semester.

Surgery of the head, neck, chest, back, breast, abdomen, including hernia, anus, rectum, and urinary tract.

Surgical Quiz (one hour per week) Dr. RITCHIE

6. Operative Surgery Dr. MANN
Four laboratory hours per week; fifth year, third quarter.
Practical exercises on the cadaver illustrative of the courses in surgery.

7. Orthopedic Surgery Dr. GILLETTE
Two lectures and recitations per week; sixth year, fourth quarter.
This includes diseases of bones, joints, synoviae, and bursae, congenital and acquired deformities; dystrophies, with the principles of treatment.

8. Dermatology, Genito-Urinary and Venereal Diseases
One lecture or recitation per week; sixth year, throughout.

9. Clinical Lectures on Dermatology, Genito-Urinary and Venereal Diseases DRS. FOSTER, WRIGHT, and SWEITZER
Weekly at Minneapolis and St. Paul City Hospitals and daily at the University Clinical Building and St. Paul Dispensary; sixth year.

10. Tumors Dr. STEWART
Two lectures and demonstrations per week; sixth year, second semester.
The course on tumors is comprehensive, including a complete systematic laboratory course on tumor histology by Dr. Corbett and regional tumor surgery with lantern slide demonstrations by Dr. Stewart. The general subject of tumors, their life history, classification, pathogenesis, diagnosis, and treatment, is taken up by lectures.
Regional surgery of tumors is also considered fully and is copiously illustrated by lantern slides.
Quiz (one hour per week) Dr. HARE

11. Laboratory Course on Tumors Dr. CORBETT
Two hours per week; fifth year, second semester.
Each variety of tumor is taken up and studied. Students are given sections illustrating same. With this microscopic study is combined recitation and demonstrations of gross tumors with histories, photographs, and lantern slides. (See also Course 7 under Department of Pathology and Bacteriology.)

13. Clinical Surgery
Courses of clinics at which operations in the whole domain of surgery are witnessed by the students of the fifth and sixth years. These clinics are held in the dispensaries and hospitals of the cities of Minneapolis and St. Paul, upon Thursdays and Saturdays throughout the year. The classes alternate at the two cities in their attendance upon these clinics. They are conducted personally, throughout the year, by the clinical chiefs and their associates as follows:
University hospital clinics, medical and surgical clinics will be held every Thursday and Saturday, the former by Dr. Greene and his assistants, and the latter by Dr. Moore and his assistants. Bedside clinics will be given throughout the week by various members of the staff.
At the City and County Hospital, St. Joseph's Hospital, St. Luke's Hospital in St. Paul, weekly, by Dr. John T. Rogers.
At the City and County Hospital, St. Joseph's Hospital, St. Luke's Hospital, or Free Dispensary, in St. Paul, with sections of class weekly, by Drs. John T. Rogers, A. J. Gillette, W. A. Dennis, and A. Colvin.

At St. Luke's Hospital, Dr. Archibald MacLaren.

At St. Joseph's Hospital, Dr. H. J. O'Brien.

At the City Hospital, Minneapolis, surgical clinics will be given every Thursday and Saturday from 8:30 to 10 by Drs. Dunsmoor, Sweitzer, Mann, Wilcox, and Farr.

Text-Books.—Rose and Carless, Surgery; Keen, Surgery; Binnie, Operative Surgery; Scudder on Fractures; Stimson on Fractures and Dislocations; Bradford and Lovett, Orthopedic Surgery.

Dermatology, Genito-Urinary and Venereal Diseases.—Key or White and Martin, Diseases of Urinary Organs and Lydston, Genito-Urinary, Venereal, and Sexual Diseases; Hyde, Diseases of the Skin; Walker, Dermatology; Jackson, Diseases of the Skin; Hyde and Montgomery, Venereal Diseases; Crocker, Diseases of Skin; Morris, Diseases of the Skin; Hayden, Diseases of the Skin; Stelwagon, Diseases of the Skin; Taylor, Genito-Urinary and Venereal Diseases of the Skin.

DEPARTMENT OF OBSTETRICS AND GYNECOLOGY

PARKS RITCHIE, M.D., Professor of Obstetrics and Gynecology and Chief of Department

ABRAHAM B. CATES, M.A., M.D., Professor of Obstetrics

FREDERICK LEAVITT, M.D., Clinical Professor of Obstetrics and Gynecology

JENNETTE M. McLAREN, M.D., Clinical Instructor in Obstetrics

FRED L. ADAIR, B.S., M.D., Instructor in Obstetrics and Gynecology

LOUIS SYDNEY B. ROBINSON, B.A., M.D., Clinical Assistant in Obstetrics

JAMES W. GEORGE, B.S., M.D., Clinical Assistant in Obstetrics

CHARLES L. RODGERS, M.D., Clinical Assistant in Obstetrics

JENNINGS C. LITZENBERG, B.S., M.D., Associate Professor of Gynecology and Obstetrics and Chief of the Out-Patient Service

JOHN L. ROTHROCK, M.A., M.D., Clinical Professor of Gynecology

ARTHUR E. BENJAMIN, M.D., Clinical Instructor in Gynecology

HENRY L. WILLIAMS, M.D., Instructor in Gynecology

GEORGE C. BARTON, M.D., Clinical Instructor in Gynecology

IVAR SIVERTSEN, M.D., Clinical Instructor in Gynecology

HALLWARD M. BLEGEN, B.A., M.D., Clinical Assistant in Gynecology

S. J. ASPELUND, M.D., Clinical Assistant

Departmental Office in Institute of Anatomy

The course in Obstetrics is graded in the junior and senior years. Examinations are held at the close of each of these years. Besides the regular didactic lectures given students throughout their junior year by Drs. Ritchie and Cates, the entire subject of obstetrics is reviewed by quiz in the senior year by Drs. Leavitt and Litzenberg. A laboratory course in obstetric pathology will be given to seniors by Dr. Adair.

The opportunity of studying the subject clinically is ample. The public hospitals of both cities allow free use of many hundreds of patients, for the study and observation of women before, during, and after labor. The establishment of a maternity ward in our new University Hospital

has greatly enlarged our facilities. An out-patient department in each city, which permits of experiences from a different standpoint, also furnishes an abundance of material.

Participation in the conduct of at least six deliveries in the senior year is required of each candidate for a degree. Proof of such work will be the filling out of certain history sheets, and filing the same with the chairman of this department, no single case being reported by more than five students, preferably by one or two.

1. Obstetric Anatomy and Physiology Dr. CATES

Lectures and recitations to juniors during September and October.

Maternal pelvic anatomy; physiology of pregnancy; pathology of pregnancy; diagnosis of pregnancy.

2. Theory and Practice of Obstetrics Dr. RITCHIE

Lectures and recitations to juniors during November, December, and January.

Abortion and premature labor; physiology and clinical history of labor; mechanism and management of labor; puerperium and care of the new-born infant; post-partum hemorrhage.

3. Dystocia Dr. CATES

Lectures and recitations to juniors. Second semester.

Abnormal positions and presentations of the fetus; forceps; version; eclampsia; placenta previa; extra-uterine pregnancy; puerperal septicaemia; pelvic deformities; obstetric surgery.

4. Recitations by Seniors DRS. LEAVITT and LITZENBERG

5. Manikin Demonstrations

Drs. Leavitt and Robinson at the St. Paul City and County Hospital and by Drs. Litzenberg and Adair at the University Dispensary, to seniors and juniors.

6. Hospital Ward Work DRS. LEAVITT, LITZENBERG, ADAIR, and
ROBINSON

Weekly clinics throughout the year will be given to members of the senior and junior classes. Students will be taken in small sections through the maternity ward, where opportunity is afforded for the antepartum examination of the pregnant woman, the observation of the puerperium with its management, and the study of the ailments and the care of the new-born infant.

Text-Books.—Hirst, Edgar, Williams, Davis.

GYNECOLOGY

The course in gynecology consists of lectures, recitations, demonstrations, and clinical instruction.

1. Lectures and Recitations Dr. WILLIAMS

Fifth year, second quarter.

In this course the essentials of the subject of gynecology are reviewed by quiz and lecture.

2. General Principles of Gynecology Drs. LITZENBERG and LEAVITT
Two hours per week for six weeks; sixth year, first semester.
Infections, inflammations, and allied disorders of the genital tract.
3. Tumors of the Genital Organs Dr. ADAIR
Two hours per week for six weeks; sixth year, first semester.
Including tumors of the external genitals, vagina, uterus and adnexa.
4. Injuries and Displacements Dr. LITZENBERG
Two hours per week for six weeks; sixth year, second semester.
Including tubal pregnancy and malformations, traumatisms and displacements of the uterus and other pelvic organs, disorders of menstruation, and sterility.
6. Clinical Gynecology
 - a. Weekly clinics in diseases of women are given in the hospitals of Minneapolis by Drs. Benjamin and Barton.
 - b. Weekly clinics in the City and County Hospital of St. Paul, during January, February, and March, by Dr. Rothrock. Every operation in this subject is presented in these clinics. In addition to these exclusively gynecological clinics, numerous gynecologic operations are performed in the department of surgery.

DEPARTMENT OF EYE, EAR, NOSE, AND THROAT DISEASES

FRANK C. TODD, M.D., Professor and Chief of the Department

WILLIAM R. MURRAY, B.A., M.D., Professor of Rhinology and Laryngology

JOHN S. MACNIE, B.A., M.D., Clinical Professor of Ophthalmology and OTOLOGY

ALBERT C. HEATH, M.D., Clinical Professor of Rhinology and Laryngology

FRANK E. BURCH, M.D., Assistant Professor of Ophthalmology and Otolology

ELMER H. PARKER, M.D., Assistant Professor of Rhinology and Laryngology

CHARLES N. SPRATT, B.S., M.D., Clinical Instructor in Ophthalmology and Otolology

EUGENE S. STROUT, M.D., Clinical Instructor in Ophthalmology and Otolology

LOUIS A. NELSON, M.D., Clinical Instructor in Ophthalmology and Otolology

JOHN H. MORSE, B.A., M.D., Clinical Instructor in Ophthalmology and Otolology

H. JOURNEAY WELLES, M.D., Clinical Instructor in Ophthalmology and Otolology

ELWYN R. BRAY, M.D., Clinical Assistant in Ophthalmology and Otolology

EDWARD V. GOLTZ, M.D., Clinical Assistant in Rhinology and Laryngology

FRED J. PRATT, M.D., Clinical Assistant in Ophthalmology and Otolology

HARRY E. CANFIELD, M.D., Clinical Assistant in Ophthalmology and Otolology

DOUGLAS F. WOOD, M.D., C.M., Clinical Assistant in Rhinology and Laryngology

CARL A. WITHAM, M.D., Voluntary Assistant in Rhinology and Laryngology

The student during the first two years receives instruction in the anatomy and physiology of these organs in those departments, and the courses upon diseases of the eye, ear, nose, and throat are given during the senior year, excepting that a certain amount of clinical work is provided during the third year.

The required work consists of a course of lectures and recitations and of dispensary and hospital clinics given in Minneapolis and St. Paul by a competent corps of instructors. Students are taught the technique of examination and treatment of the common and important diseases. An elective course is also furnished in ophthalmoscopy, and in refraction.

1. Diseases of the Eye and its Appendages Dr. TODD
Lectures (two hours a week); sixth year, first semester.

2. Diseases of the Ear Dr. TODD
Lectures (nine hours); sixth year, first semester.

3. Diseases of the Nose and Throat Dr. MURRAY
Lectures and recitations (two hours a week); sixth year, second quarter.
Pathology, diagnosis, and treatment.

4. Clinical lectures on eye, ear, nose, and throat operations, Minneapolis, given every Thursday. Sections of senior and junior classes.
Dr. TODD

5. Clinical lectures and operations on nose and throat, given at Asbury and City Hospitals, Minneapolis, every Saturday. Sections of senior and junior classes.
Dr. MURRAY

6. Clinical lectures and operations on eye and ear, given at Northwestern Hospital, Minneapolis, every Saturday. Sections of senior and junior classes.
Dr. SPRATT

7. Clinical instruction will be given at the University and St. Paul Free Dispensaries in the diagnosis of diseases of the eye and ear; in the methods of examination in the use of instruments, including the ophthalmoscope; and in the treatment of eye and ear diseases, etc. Small sections daily. Sixth year.

Diseases of eye and ear, Minneapolis Drs. MACNIE, STROUT
Diseases of the eye, St. Paul Dr. BURCH

8. Clinical instruction will be given at the University and St. Paul Free Dispensary in the diagnosis of nose and throat diseases, in the methods of examination, use of instruments, and treatment of these. Small sections daily. Diseases of the nose and throat, Minneapolis.

Drs. MURRAY and PARKER
St. Paul (two days a week, fifth and sixth years) Dr. HEATH

9. Ophthalmoscopy

Dr. MACNIE

A practical course of instruction. Technique of ophthalmoscopy with illustrations on models and patients, normal and abnormal cases, demonstrating diseases of the interior of the eye. This course elective in the senior year.

10. Intubation

Dr. PARKER

An elective course in intubation illustrated by work on the cadaver will be given to sixth year students. Class limited to six students.

11. Refraction

Dr. MORSE

Elective for seniors.

Text-Books.—Reik, Diseases Ear, Nose, and Throat; Wood and Woodruff, Commoner Diseases of the Eye; De Schweinitz, Diseases of the Eye; May, Diseases of the Eye; Coakley, Diseases of the Nose and Throat; Kyle, Diseases of the Nose and Throat.

Collateral Reading.—Ballenger, Diseases of Ear, Nose, and Throat; Weeks, Diseases of Eye; Fucho, Diseases of Eye.

DEPARTMENT OF NERVOUS AND MENTAL DISEASES

C. EUGENE RIGGS, M.A., M.D., Professor of Nervous and Mental Diseases and Chief of Department

WILLIAM A. JONES, M.D., Professor of Nervous and Mental Diseases

ARTHUR W. DUNNING, M.D., Clinical Professor of Nervous and Mental Diseases

HALDOR SNEVE, M.D., Clinical Professor of Nervous and Mental Diseases

CHARLES R. BALL, M.D., Clinical Instructor in Nervous and Mental Diseases

ARTHUR S. HAMILTON, B.S., M.D., Instructor in Pathology of the Nervous System, and Clinical Instructor in Nervous and Mental Diseases

HERBERT W. JONES, M.D., Clinical Instructor in Nervous and Mental diseases

ADOLPH E. LOBERG, M.D., Clinical Assistant in Nervous and Mental Diseases

The required courses of lectures and recitations and clinics in this department will be given in the sixth year. The courses relating to the anatomy, physiology, and pathology of the nervous system are given by these departments in the third, fourth, and fifth years. Instruction will be by recitations and the "case method." An elective course in electro-therapeutics will be offered in the sixth year.

1. Neurology

Drs. RIGGS and JONES (alternating)

Two hours per week; sixth year, first semester.

Lectures, recitations, and demonstrations.

2. Psychiatry

Drs. RIGGS and JONES (alternating)

Two hours per week; sixth year, third quarter.

Lectures, recitations, and demonstrations.

3. Electro-Diagnosis and Electro-Therapy

Dr. BALL

Elective for seniors.

4. Clinical Neurology and Psychiatry

Drs. RIGGS and JONES

Practical instruction will be given on Thursdays and Saturdays, sixth year. Clinics will be conducted in St. Paul, by Drs. Riggs, Dunning, Sneve, and Ball, at the City and County Hospital, and the Free Dispensary; and in Minneapolis by Drs. W. A. Jones, A. S. Hamilton, H. W. Jones, and Loberg, at the City Hospital, and the University Free Dispensary.

Text-Books.—Dana, Text Book of Nervous Diseases and Psychiatry; White, Outlines of Psychiatry.

Collateral Reading.—Oppenheim, Diseases of the Nervous System; Church and Peterson, Nervous and Mental Diseases; Starr, Nervous Diseases, Organic and Functional; Bianchi, Text-Book of Psychiatry.

THE HISTORY OF MEDICINE AND MEDICAL ETHICS

Dr. BURNSIDE FOSTER

Two hours a week; sixth year, fourth quarter.

An elective course of lectures is given on the history of medicine and of the medical profession from the earliest times, including accounts of the epoch-making discoveries in medicine, brief sketches of the lives of eminent physicians, and an account of the great plagues in history. One lecture in this course is devoted to medical ethics, medical economics, and the relations of physicians to each other and to the community.

MEDICAL JURISPRUDENCE

Dr. SWEENEY

Two hours a week; sixth year, fourth quarter.

A course of lectures and recitations, in the legal relations of medicine.

Text-Books.—Taylor, Medical Jurisprudence.

Collateral Reading.—Withau, Principles of Forensic Medicine and Toxicology; Wharton and Stille, Medical Jurisprudence; Reese, Medical Jurisprudence and Toxicology; Draper, Medical Jurisprudence.

SCHEDULE FOR THE YEAR 1912-1913

In the following schedule the time occupied by the several departments, on the basis of thirty-two weeks of actual instruction, is as follows:

	<i>Hours</i>	<i>Units</i>
Anatomy	944	59
Organic Chemistry, Toxicology, Water and Food Analysis	192	12
Physiology	592	37
Pharmacology	272	17
Bacteriology, Pathology, and Hygiene	752	47
Medicine (incl. Pediatrics)	720	45
Surgery (incl. Dermatology and Genito- Urinary Diseases)	784	49
Obstetrics and Gynecology	288	18
Mental and Nervous	128	8
Eye, Ear, Nose, and Throat	144	9
Medical Jurisprudence	16	1
History of Medicine	16	1
Total	4848	303

It is expected that as soon as the new buildings are completed the work in dissection will all be placed in the freshman year, general bacteriology in the freshman year, neurology in the sophomore year, and other changes will be made to bring about a more perfect correlation of subjects.

FIRST QUARTER, SEPT. 18, 1912 TO NOV. 14, 1912

THIRD YEAR								
	8:00	9:00	10:00	11:00	1:00	2:00	3:00	4:00
Mon.	Histology and Splanchnology					Dissection		
Tue.	Osteology		Embryology				Chemistry	
Wed.	Histology and Splanchnology					Dissection		
Thu.	Histology and Splanchnology		Embryology				Chemistry	
Fri.	Osteology		Embryology			Dissection		
Sat.	Osteology	Hist. & Splanch.						
FOURTH YEAR								
Mon.	Gen. Bact.	Physiology				General Bacteriology	Physiology	
Tue.	Gen. Bact.	Physiology				General Bacteriology	Physiology	
Wed.		Special Sense Organs				General Bacteriology		
Thu.	Gen. Bact.	Special Sense Organs				General Bacteriology	Physiology	
Fri.	Gen. Bact.	Physiology				General Bacteriology	Physiology	
Sat.	Gen. Bact.	Physiology						
FIFTH YEAR								
Mon.	Children	Obstetrics	Electives		Medical Quiz	Practice	Pharmacology	
Tue.	Surgical Technic	Prin. of Surgery	Obstetrics	Surgical Anatomy		Practice	Surgical Anatomy	
Wed.	Children	Clinical Pathology			Medical Quiz	Practice	Pharmacology	
Thu.		Clinics				Clinics		
Fri.	Surgical Quiz	Prin. of Surgery	Clinical Pathology			Practice	Pharmacy 3:00 to 6:00	
Sat.		Clinics					Clinics	
SIXTH YEAR								
Mon.	Eye & Ear	Obstetrics Quiz	Clinics		Dispensary	Practice	Laryngology	
Tue.	Ment. & Ner.	Gynecology	Clinics	Surgery	Dispensary	Practice	Therap. Conf.	
Wed.	Eye & Ear	Surgical Quiz	Clinics	Medical Quiz	Dispensary	Practice	Hygiene	
Thu.		Clinics				Clinics		
Fri.	Ment. & Ner.	Gynecology	Clinics	Surgery	Dispensary	Dermatology	Hygiene	
Sat.		Clinics				Clinics		

SECOND QUARTER, NOV. 15, 1912 TO FEB. 6, 1913

SCHEDULE FOR THE YEAR 1912-13

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THIRD YEAR						
Mon.	8:00 Osteology	9:00 Hist. & Splanch.	10:00	11:00	1:00	2:00 Dissection 3:00 Chemistry 4:00
Tue.			Embryology			
Wed.	Osteology	Hist. & Splanch.			Dissection	
Thu.	Histology & Splanchnology			Embryology		Chemistry
Fri.			Embryology		Dissection	
Sat.	Histology & Splanchnology					
FOURTH YEAR						
Mon.	General Pathology			Physiology		Physiology
Tue.	General Pathology				Physiology	
Wed.	General Pathology				Physiology	
Thu.	General Pathology				Physiology	
Fri.	General Pathology				Physiology	
Sat.	General Path.		Physiology			
FIFTH YEAR						
Mon.	Children	Gynecology	Electives		Medical Quiz	Practice Surgical Pathology
Tue.	Surgical Technic	Prin. of Surgery	Obstetrics	Surgical Anatomy	Pharmacology	Practice Surgical Anatomy
Wed.	Children	Gynecology	Electives		Medical Quiz	Practice Surgical Path.
Thu.		Clinics				Clinics
Fri.	Surgical Quiz	Prin. of Surgery	Obstetrics	Surgical Anatomy	Pharmacology	Practice Surgical Pathology
Sat.		Clinics				Clinics
SIXTH YEAR						
Mon.	Eye & Ear	Obstetrics	Clinics		Dispensary	Practice Laryngology
Tue.	Ment. & Ner.	Gynecology	Clinics		Dispensary	Practice Therap. Conf.
Wed.	Eye & Ear	Surgical Quiz	Clinics	Medical Quiz	Dispensary	Practice Hygiene
Thu.		Clinics				Clinics
Fri.	Ment. & Ner.	Gynecology	Clinics	Surgery	Dispensary	Dermatology Hygiene
Sat.		Clinics				Clinics

THIRD QUARTER, FEB. 7, 1913 TO APR. 10, 1913

THIRD YEAR								
	8:00	9:00	10:00	11:00	1:00	2:00	3:00	4:00
Mon.		Neurology		Physiology		Histology & Splanchnology		
Tue.	Neurology		Physiology				Chemistry	
Wed.		Neurology			Histology & Splanchnology			Physiology
Thu.	Neurology		Physiology				Chemistry	
Fri.		Physiology			Histology & Splanchnology			
Sat.		Physiology						
FOURTH YEAR								
Mon.		Special Pathology and Bacteriology		Pharmacology		Dissection		
Tue.		Special Pathology and Bacteriology				Dissection		
Wed.		Special Pathology and Bacteriology		Pharmacology			Dissection	
Thu.		Special Pathology and Bacteriology				Dissection		
Fri.		Special Pathology and Bacteriology		Pharmacology		Dissection		
Sat.	Spec. Path. & Bacteriology		Dissection					
FIFTH YEAR								
Mon.		Operative Surgery		Obstetrics		Medical Quiz	Practice	Pathology of Nervous System
Tue.	Children	Obstetrics		Surgery			Practice	Pathology of Nervous System
Wed.	Surgical Quiz	Children		Obstetrics		Medical Quiz	Practice	Pharmacology
Thu.			Clinics					Clinics
Fri.		Operative Surgery		Surgery		Medical Quiz	Practice	Pharmacology
Sat.			Clinics					Clinics
SIXTH YEAR								
Mon.	Hygiene	Tumors		Clinics		Dispensary	Practice	Therap. Conf.
Tue.	Ment. & Ner.	Hygiene		Clinics		Dispensary	Practice	Hygiene
Wed.	Hygiene	Obstetrics		Clinics		Dispensary	Practice	
Thu.			Clinics				Clinics	
Fri.	Ment & Ner.	Tumors		Clinics		Dispensary	Dermatology	
Sat.			Clinics				Clinics	

FOURTH QUARTER, APR. 11, 1913 TO JUNE 7, 1913

THIRD YEAR								
	8:00	9:00	10:00	11:00	1:00	2:00	3:00	4:00
Mon.		Neurology		Physiology		Physiology		
Tue.	Neurology		Physiology			Chemistry	Toxicology, Water & Food Analysis	
Wed.		Neurology				Physiology		
Thu.	Neurology		Physiology			Chemistry	Toxicology, Water & Food Analysis	
Fri.		Physiology						
Sat.		Physiology						
FOURTH YEAR								
Mon.	Special Pathology and Bacteriology				Topographic Anatomy			
Tue.	Medical Case-taking	Special Pathology and Bacteriology				Pharmacology		
Wed.	Physical Diagnosis	Topographic Anatomy				Topographic Anatomy		
Thu.	Medical Case-taking	Special Pathology and Bacteriology				Pharmacology		
Fri.	Special Pathology and Bacteriology					Pharmacology		
Sat.	Physical Diagnosis	Special Pathology and Bacteriology						
FIFTH YEAR								
Mon.	Pathology of Ner. System		Obstetrics	Electives	Medical Quiz	Practice	Pathology of Tumors	
Tue.	Children	Obstetrics	Surgery	Electives		Practice	Pathology of Tumors	
Wed.	Pathology of Ner. System		Obstetrics	Electives	Medical Quiz.	Practice	Pharmacology	
Thu.		Clinics				Clinics		
Fri.	Surgical Quiz	Children	Surgery	Electives	Medical Quiz	Practice	Pharmacology	
Sat.		Clinics				Clinics		
SIXTH YEAR								
Mon.	History of Medicine	Tumors	Clinics		Dispensary	Practice	Therap. Conf.	
Tue.	Orthopedia		Clinics	Gynecology	Dispensary	Practice	Hygiene	
Wed.	Hygiene	Obstetrics	Clinics		Dispensary	Practice	Medical Jurisp.	
Thu.		Clinics				Clinics		
Fri.	History of Medicine	Tumors	Clinics	Gynecology	Dispensary	Dermatology	Medical Jurisp.	
Sat.		Clinics				Clinics		

SCHEDULE OF CLINICS, 1912-13

MINNEAPOLIS CLINICS

(For Dispensary Clinics, see page 74)

Thursday

HOOR	SUBJECT	CLINICIAN	SERVICE
	Tuberculosis		Thomas H.
8:30-10:00	Medicine	Dr. White	Univ. H., 1st semester
8:30-10:00	Medicine	Dr. Sheldon	Univ. H., 2d semester
8:30-10:00	Surgery	Dr. Sweetser	City H., 1st semester
8:30-10:00	Surgery	Dr. Farr	City H., 2d semester
8:30-10:00	Eye and Ear	Dr. Todd	N. W. H. or Univ. H.
8:30-10:00	Pediatrics	Dr. Sedgwick	City H., to Nov. 1
8:30-10:00	Pediatrics	Dr. Roberts	City H., Nov. 1 to Mar. 1
8:30-10:00	Pediatrics	Dr. C. B. Wright	City H., Mar. 1 to end of year
10:00-11:30	Surgery	Dr. Moore	Univ. H.
10:00-11:30	Nose and Throat	Dr. Murray	Asb. or Univ. H.
10:00-11:30	Gynecology	Dr. Benjamin	N. W. H.
10:00-11:30	Obstetrics	Dr. Litzenberg or Dr. Adair	City H.
1:00-2:15	Disp. Clinics	Disp. Clinicians	Univ. Dispensary
2:30-3:45	Medicine	Dr. Greene	Univ. H.
2:30-3:45	Medicine	Dr. Staples	C. H., Oct. 1 to Jan. 1
2:30-3:45	Medicine	Dr. Nippert	C. H., Oct. 1 to Jan. 1
2:30-3:45	Medicine	Dr. Bradley	C. H., Jan. 1 to Apr. 1
2:30-3:45	Medicine	Dr. Cross	C. H., Jan. 1 to Apr. 1
2:30-3:45	Medicine	Dr. Sheldon	C. H., Apr. 1 to end of year
2:30-3:45	Medicine	Dr. Cook	C. H., Apr. 1 to end of year
2:30-3:45	Nervous and Mental	Dr. W. A. Jones	C. H.

Saturday

HOOR	SUBJECT	CLINICIAN	SERVICE
	Tuberculosis		Thos. H.
8:30-10:00	Surgery	Dr. Dunsmoor	Swed. H.
8:30-10:00	Surgery	Dr. Wilcox	C. H., Jan. 1 to Mar. 1
8:30-10:00	Gynecology	Dr. Barton	C. H., Nov. 1 to Jan. 1
8:30-10:00	Medicine	Dr. Hynes	Univ. H., Oct. 1 to Jan. 1
8:30-10:00	Medicine	Dr. Cook	Univ. H., Jan. 1 to Apr. 1
8:30-10:00	Medicine	Dr. Ulrich	Univ. H., Apr. 1 to end of year
8:30-10:00	Pediatrics	Dr. Sedgwick	C. H., to Nov. 1
8:30-10:00	Pediatrics	Dr. Roberts	C. H., Nov. 1 to Mar. 1

Saturday

HOURL	SUBJECT	CLINICIAN	SERVICE
8:30-10:00	Pediatrics	Dr. C. B. Wright	C. H., Mar. 1 to end of year
8:30-10:00	Contagious	Dr. Dart	C. H., Nov. 1 to Mar. 1
8:30-10:00	Contagious	Dr. Sedgwick	C. H., Mar. 1 to end of year
10:00-11:30	Surgery	Dr. Mann	C. H., Oct. 1 to Jan. 1
10:00-11:30	Surgery	Dr. Stewart	Univ. H.
10:00-11:30	Gynecology	Dr. Barton	C. H., Jan. 1 to Mar. 1
10:00-11:30	Eye and Ear	Dr. Spratt	N. W. H.
1:00-2:15	Disp. Clinics	Disp. Clinicians	Univ. Dispensary
2:30-3:45	Medicine	Dr. Staples	C. H., Oct. 1 to Jan. 1
2:30-3:45	Medicine	Dr. Nippert	C. H., Oct. 1 to Jan. 1
2:30-3:45	Medicine	Dr. Bradley	C. H., Jan. 1 to Apr. 1
2:30-3:45	Medicine	Dr. Cross	C. H., Jan. 1 to Apr. 1
2:30-3:45	Medicine	Dr. Shelden	C. H., Apr. 1 to end of year
2:30-3:45	Medicine	Dr. Cook	C. H., Apr. 1 to end of year
4:00-5:30	Nervous and Men- tal	Dr. H. W. Jones or Dr. Hamilton	C. H.
4:00-5:30	Orthopedics	Dr. Geist	N. W. H.

Parturition clinics throughout the year by Dr. Litzenberg and Dr. Adair and their assistants, for seniors, at the City Hospital and in the Out-Patient Service.

ST. PAUL CLINICS

Thursday

HOURL	SUBJECT	CLINICIAN	SERVICE
9:00-12:00	Surgery	Drs. MacLaren and Ritchie	St. Luke's, Oct. to June
9:00-12:00	Surgery	Dr. O'Brien	St. Joseph's, Oct. to June
9:00-12:00	Orthopedia	Dr. Gillette	City H., Oct. to June
9:00-12:00	Gynecology	Dr. Rothrock	City H., Jan. to April
1:30-2:30	Pediatrics	Dr. Christison	Dispensary, Oct. to June
1:30-2:30	Nose and Throat	Dr. Heath	Dispensary, Oct. to June
1:30-2:30	Eye and Ear	Dr. Burch	Dispensary, Oct. to June
1:30-2:30	Eye and Ear	Dr. Nelson	Dispensary, Jan. to Apr.
1:30-2:30	Ner. and Ment.	Dr. Dunning or Ball	Dispensary, Oct. to June
1:30-2:30	Gynecology	Dr. Rothrock or Dr. Ritchie	Dispensary, Oct. to June
1:30-3:00	Surgery	Dr. Goodrich	City H., Oct. to Jan.
1:30-3:00	Surgery	Dr. Colvin	City H., Jan. to April
1:30-3:00	Medicine	Dr. Senkler	City H., Oct. to Jan.
1:30-3:00	Medicine	Dr. Hoff	City H., Oct. to Jan.
1:30-3:00	Medicine	Dr. Abbott	City H., Jan. to April
1:30-3:00	Medicine	Dr. Gilfillan	City H., Jan. to April
1:30-3:00	Medicine	Dr. Meade	City H., April to June
1:30-3:00	Medicine	Dr. Nippert	City H., April to June
1:30-3:00	Medicine	Dr. Stumm	City H., Oct. to June
1:30-3:00	Obstetrics	Dr. Leavitt or Dr. Robinson	City H., Oct. to June
1:30-3:00	Pediatrics	Dr. Ramsey	City H., Oct. to June
1:30-3:00	G.-U.	Dr. Armstrong	City H., Oct. to Jan.
1:30-3:00	G.-U.	Dr. Cook	City H., Jan. to June
1:30-3:00	Eye and Ear	Dr. Nelson	City H., Oct. to Jan.
1:30-3:00	Eye and Ear	Dr. Burch	City H., Jan. to April
3:00-4:00	Clinical lecture in Medicine Entire class		City H., Oct. to June

Saturday

HOURL	SUBJECT	CLINICIAN	SERVICE
9:00-10:00	Ner. and Ment.	Dr. Dunning	City H., Oct. to Dec.
9:00-10:00	Ner. and Ment.	Dr. Riggs	City H., Dec. to Mar.
9:00-10:00	Ner. and Ment.	Dr. Sneve	City H., Mar. to June
10:00-12:00	Surgery	Dr. Shimonek	City H., Oct. to Jan.
10:00-12:00	Surgery	Dr. Rogers	City H., Jan. to April
1:30-2:30	Dermatology	Dr. Foster or Dr. Freeman	Dispensary, Oct. to June
1:30-2:30	Nose and Throat	Dr. Heath	Dispensary, Oct. to June
1:30-2:30	Eye and Ear	Dr. Burch	Dispensary, Oct. to Jan.

Saturday

HOOR	SUBJECT	CLINICIAN	SERVICE
1:30-2:30	Ner. and Ment.	Dr. Dunning or Dr. Ball	Dispensary, Oct. to June
1:30-2:30	Pediatrics	Dr. Christison	Dispensary, Oct. to June
1:30-2:30	Gynecology	Dr. Rothrock or Dr. Ritchie	Dispensary, Oct. to June
1:30-3:00	Surgery	Dr. Dennis	City H., Jan. to Apr.
1:30-3:00	Surgery	Dr. Goodrich	City H., Oct. to Jan.
1:30-3:00	G.-U.	Dr. Armstrong	City H., Oct. to Jan.
1:30-3:00	G.-U.	Dr. Cook	City H., Jan. to June
1:30-3:00	Eye and Ear	Dr. Nelson	City H., Oct. to Jan.
1:30-3:00	Eye and Ear	Dr. Burch	City H., Jan. to April
1:30-3:00	Medicine	Dr. Senkler	City H., Oct. to Jan.
1:30-3:00	Medicine	Dr. Hoff	City H., Oct. to Jan.
1:30-3:00	Medicine	Dr. Abbott	City H., Jan. to April
1:30-3:00	Medicine	Dr. Gilfillan	City H., Jan. to April
1:30-3:00	Medicine	Dr. Meade	City H., April to June
1:30-3:00	Medicine	Dr. Nippert	City H., April to June
1:30-3:00	Medicine	Dr. Stumm	City H., Oct. to June
1:30-3:00	Obstetrics	Dr. Leavitt or Dr. Robinson	City H., Oct. to June
1:30-3:00	Pediatrics	Dr. Ramsey	City H., Oct. to June
3:00-4:00	Clinical lecture in Medicine Entire class		City H., Oct. to June

Parturition clinics throughout the year at City Hospital, Maternity, and Dispensary out-service with Drs. Leavitt and Jennette McLaren. (One to five students.)

NOTICE:—Throughout the school year, clinics for each week are announced in advance by the publication of a weekly bulletin covering hospitals and dispensaries in the Twin Cities.

MINNEAPOLIS DISPENSARY CLINICS

1:00 to 3:00 p.m.

Mon., Wed., Fri.	Medicine	Drs. Cross, Moren, Pratt, and Baker	Oct. to June
Tue., Thur., Sat.	Medicine	Drs. Rees, Aurand, Hynes, Bissell, and Huenebens	Oct. to June
Daily	Surgery	Drs. Hare, Poppe, and Olson	Oct. to Feb.
Daily	Surgery	Drs. Stewart, Strachauer, and Brown	Feb. to June
Mon., Wed., Fri.	Obstetrics and Gynecology	Drs. Litzenberg and Sivertsen	Oct. to June
Tue., Thur., Sat.	Obstetrics and Gynecology	Drs. Williams and Adair	Oct. to June
Mon., Wed., Fri.	Eye and Ear	Drs. Macnie, Morse, and Wood	Oct. to June
Tue., Thur., Sat.	Eye and Ear	Drs. Strout and Pratt	Oct. to June
Mon., Wed., Fri.	Nose and Throat	Drs. Murray and Witham	Oct. to June
Tue., Thur., Sat.	Nose and Throat	Drs. Parker and Wood	Oct. to June
Mon., Wed., Fri.	Genito-Urinary	Dr. Wright	Oct. to June
Tue., Thur., Sat.	Genito-Urinary	Dr. Owre	Oct. to June
Mon., Wed., Fri.	Dermatology	Dr. Sweitzer, Butler, or Irvine	Oct. to June
Tue., Thur., Sat.	Dermatology	Drs. Butler and Irvine	Oct. to June
Mon., Wed., Fri.	Ner. and Ment.	Drs. Hamilton and Loberg	Oct. to June
Daily	Pediatrics	Drs. Sedgwick and Schlutz	Jan. to July
Daily	Pediatrics	Drs. Dart and Williams	July to Jan.
Mon., Wed., Fri.	Orthopedics	Drs. Geist and Reed	The year
Daily	Laboratory	Drs. Robertson, Ulrich, and Drake	The year

STUDENTS

GRADUATE STUDENTS—3

- | | |
|--|---|
| George A. Barker, Minneapolis
M.D., '84, Bowdoin College | Sullivan, Dennis W., Minneapolis
M.D., '11, Ensworth Medical College |
| Thomas, Forrest, Frazier, Mo.
M.D., '08, Ensworth Medical College | |

SHEVLIN FELLOW IN MEDICINE

- John, Henry J., Minneapolis
B.A., '11, University of Kansas

SIXTH YEAR—35

- | | |
|---|--------------------------------------|
| Amundsen, Albert E., St. Paul | Klein, Harry, Duluth |
| Baker, Willard R., Leavenworth, Kan.
B.A., '08, Park College | B.S., '10, University of Minnesota |
| Barnard, Elizabeth, Minneapolis | Knight, Ralph T., Minneapolis |
| Benson, Ross D., Toledo, Ia. | B.A., '08, University of Minnesota |
| B.S., '07, Leander Clark College | Lawler, Frank J., Minneapolis |
| Bergan, Otto, Everett, Wash. | Long, Will H., Elysian |
| B.S., '08, St. Olaf College | Michelson, Henry E., Bismarck, N. D. |
| Berrisford, Paul D., St. Paul | B.S., '10, University of Minnesota |
| Bratrud, Arthur F., St. Paul | Nordley, Harry R., Minneapolis |
| Bye, Richard, Lily, S. D. | Passer, Adolph A., Waseca |
| B.S., '08, St. Olaf College | B.A., '02, University of Minnesota |
| Carroll, William C., St. Paul | Peppard, Thomas A., Minneapolis |
| B.S., '10, University of Minnesota | B.S., '11, University of Minnesota |
| Dedolph, Theodore H., St. Paul | Pollock, Lee W., Rochester |
| Douglass, Jesse E., Blue Earth | B.S., '11, University of Minnesota |
| B.S., '10, University of Minnesota | Rothnem, Thomas Peter, Madison |
| Drake, Charles B., St. Paul | Seifert, Otto J., New Ulm |
| B.A., '08, Yale University | B.S., '10, University of Minnesota |
| Eisengraeber, Gustav A., Granite Falls | Snyder, George William, St. Paul |
| Flom, Andrew O., Minneapolis | B.S., '10, University of Minnesota |
| B.S., '08, St. Olaf College | Thompson, Victor C., Preston |
| Gardner, Edwin L., Minneapolis | Weed, Frank E., Conway, N. D. |
| B.S., '10, University of Minnesota | Whittier, Raymond W., Minneapolis |
| Kirsch, Ralph L., Crookston | B.S., '11, University of Minnesota |
| B.S., '10, University of Minnesota | Wilson, Paul W., Los Angeles, Cal. |
| Kittleson, Olaf L., Zumbrota | B.S., Iowa Wesleyan University |
| B.S., '10, University of Minnesota | Workman, Walter G., Tracy |
| | Zimmerman, James, Vandalia, Ill. |
| | B.A., Wabash College |

FIFTH YEAR—46

- | | |
|--|---|
| Babcock, Fager M., Minneapolis
B.A., '09, University of Minnesota | Brodie, Walter D., St. Paul
B.S., '11, University of Minnesota |
| Badeaux, George I., Brainerd | Cabot, Verne S., Minneapolis |
| B.S., '11, University of Minnesota | Cornica, Albert D., Plato |
| Bailey, Herbert B., Jackson | Davis, Thayer C., Akeley |
| Berge, Parker L., Jackson | B.S., '11, University of Minnesota |
| Bonness, Hazel, Minneapolis | Dorge, Richard I., Minneapolis |
| B.S., '11, University of Minnesota | B.S., '11, University of Minnesota |
| Bratrud, Olaf E., St. Paul | Engberg, Edward J., Cambridge |
| B.S., '11, University of Minnesota | |

- Evert, John A., St. Paul
B.S., '10, Macalester College
- Finley, William F., Perryville, Wis.
B.S., '11, University of Minnesota
- Freligh, Wilfred P., Stillwater
B.A., '11, University of Minnesota
- Giessler, Paul W., Minneapolis
Hall, Joseph M., Minneapolis
B.S., '11, University of Minnesota
- Hawke, Charles C., Pueblo, Colo.
B.A., '07, University of Denver
- Hayes, Edward W., Millville
B.S., Carleton College
- Howe, Archibald W., St. Paul
B.S., '11, University of Minnesota
- Johnson, Albert W., Minneapolis
B.S., '11, University of Minnesota
- Josewitch, Alexander, Minneapolis
B.S., '11, University of Minnesota
- Kucera, William J., Hutchinson
B.S., '11, University of Minnesota
- Love, Fred A., Preston
- Mariette, Ernest S., Minneapolis
B.S., '11, University of Minnesota
- Meland, Orville N., Pelican Rapids
- Michael, Joseph C., Jordan
- Moersch, Fred P., St. Paul
B.S., '11, University of Minnesota
- Woltmann, Henry W., St. Paul
B.S., '11, University of Minnesota
- Nesse, Silas A., Mabel
B.S., '11, University of Minnesota
- Noonan, Daniel P., Minneapolis
- Nordland, Martin, Minneapolis
B.S., '11, University of Minnesota
- Nuessle, Walter G., Springfield
B.S., '11, University of Minnesota
- Pearsall, Phebe L., Pt. Byron, Ill.
B.S., '04, Beloit College
- Phelps, Kenneth A., Fargo, N. D.
Quinnell, Earle D., St. Paul
B.S., '11, University of Minnesota
- Robilliard, Charles M., Faribault
B.S., '11, University of Minnesota
- Roddie, Louis H., Long Prairie
- Rosenwald, Reuben M., Plato
- Rydell, Charles B., North Branch
B.S., '11, University of Minnesota
- Sargeant, Arthur P., Northfield
- Sjolas, Amly S., Minneapolis
B.S., '11, University of Minnesota
- Snell, Charles Fremont, Detroit
B.S., '11, University of Minnesota
- Warwick, Margaret, Minneapolis
B.S., '11, University of Minnesota
- Wippermann, Paul F. W., Warrenton, Mo.
Ph.B., '08, Central Wesleyan College
- Wohlrahe, Arthur A., Truman

FOURTH YEAR—40

- *Aldworth, Harold R., Minneapolis
- *Anderson, N. Philip, St. Paul
- Borgman, Melville B. (Special), Minneapolis
- *Campbell, Lowell M., Minneapolis
- *Conley, Alva A., Cannon Falls
- Craven, Lawrence L., St. Paul
- Engh, Sigfred, Black River Falls, Wis.
B.S., '09, St. Olaf's College
- Field, Leon M., Forest City, Ia.
- *Ghostley, George F., International Falls
- *Halgren, John A., Waseca
- *Hartig, Hugo J. A. J., Minneapolis
- *Hendrickson, Gilbert, Christine, N. D.
- *Hermansen, Hermina, Fergus Falls
- *King, William (Special), Chippewa Falls, Wis.
- *King, Zerah P., Minneapolis
- *Kvitrud, Gilbert, Minneapolis
- *Leavenworth, Richard O., Minneapolis
- *Morell, Clifford F., Verndale
- *Moses, Joseph, Jr., Minneapolis
- *Myers, Thomas, St. Paul
- *Nye, Katherine A., Minneapolis
- *Odland, Henry, Hurley, S. D.
- O'Hare, Edward S., Minneapolis
- Pennie, Daniel F., Villard
B.S., '08, Carleton College
- Reynolds, Hugh W., Chatfield
- *Schroeder, John H., Minneapolis
- *Sohlberg, Olof I. A., St. Paul
- *Soloway, Saul S., Minneapolis
- Stock, Harry A., Minneapolis
- *Stone, Harold W., Caldwell, Idaho
- *Stratte, Joseph J., Dawson
- *Sutton, George E., Prior Lake
- Taylor, Kenneth, St. Paul
B.A., '06, M.A., '07, University of Minnesota
- Tolaas, Arne G. (Special), St. Paul
- Traeger, Carl A., San Jose, Ill.
- Undine, Clyde A., Minneapolis
- *Walker, James C., Jr., Minneapolis
- *Willius, Frederick A., St. Paul
- *Wold, Karl C., St. Paul
- *Woodward, Floyd O., Minneapolis

*Students of combined seven-year course in science and medicine.

THIRD YEAR—62

- *Armstrong, E. Leslie, Minneapolis
 Bakke, Hans, St. James
 *Bank, Harry E., Minneapolis
 Boquist, Eric T. W., Minneapolis
 *Borreson, Baldwin, Davenport, N. D.
 Burke, William, Chatfield
 Carman, Paul I., St. Paul
 Clark, Harry B., St. Cloud
 *Coffin, Lela L. (Special), Minneapolis
 *Cook, Robert C., Langford, S. D.
 Cooperman, Harold, Minneapolis
 *Cowin, Carl C., Adrian
 Dack, Lloyd G., Stanton
 *Davis, Lloyd T., Akeley
 *Dunn, James, Minneapolis
 Edgar, James D., Minneapolis
 B.A., '11, University of Minneosta
 Eklund, William J., Duluth
 Ellison, Edward O., Minot, N. D.
 B.A., '11, University of North Dakota
 Frise, Dudley C., Minneapolis
 Ph.C., '06, University of Minnesota
 Fullerton, Lynne A., Olympia, Wash.
 Gibbs, Jasper (Special), Minneapolis
 *Ginsberg, William, St. Paul
 Greaves, Percy, Northfield
 *Green, Everett, Le Sueur
 Halloran, Walter H., St. Paul
 Hamel, Arnold L., Crookston
 B.A., '10, Holy Cross College
 Hammermeister, Theo., Morgan
 *Hansen, Erling W., Minneapolis
 Hansen, Olga S., Bird Island
 *Hansen, Theodore, Albert Lea
 *Haskell, Abe, Minneapolis
 *Haugen, Albert I., Elbow Lake
 Hertzman, Birger C., Afton
 B.A., '11, Gustavus Adolphus College
 *Holm, George A., Minneapolis
 Jarvis, Bruce W., Davenport, Wash.
 B.S., '11, University of Washington
 *Johnson, Reuben A., Minneapolis
 *Keller, Grover J., St. Paul
 *Loken, Lawrence J. G., Minneapolis
 Lund, Simon O., Dawson
 B.A., '08, St. Olaf College
 *McFarland, Arthur H., St. Paul
 *McKeon, Joseph O. (Special), Montgomery
 *Mach, Frank B., New Prague
 Magney, Fredolph H., Minneapolis
 Magoun, Charles E., Sioux City, Ia.
 B.A., '10, Morningside College
 *Mahoney, Daniel L., Virginia
 Mark, Arthur E., St. Paul
 Mitchell, Louis A., Newark, O.
 B.A., '11, University of Colorado
 *Murphy, Frank G., Mapleton, N. D.
 *Noice, Russell R., Minneapolis
 Oftedal, Trygve, Minneapolis
 O'Neill, John W., Eveleth
 B.S., '05, Notre Dame
 Payne, Roy A., Northfield
 B.A., '06, Carleton College
 Pettersen, Bernard, St. Paul
 B.A., '08, University of Minnesota
 Preston, Paul J., Luverne
 Renshaw, Kinsley, Monona, Ia.
 *Roskilly, Gerald C., Virginia
 Ruud, Henry O., Mahanomen
 *Rypins, Stanley, St. Paul
 Saari, John A., Eveleth
 *Ward, Percy A., Zumbrota
 Waugh, Richey L., Seattle, Wash.
 Ph.C., '08, University of Washington
 B.S., '09, University of Washington
 Williams, Clayton K., Minneapolis

SEVEN-YEAR COURSE IN SCIENCE AND MEDICINE

SECOND YEAR—30

- Aker, Emil, Minneapolis
 Barnard, Charles D., Spencer, Ia.
 Bell, John W., Minneapolis
 Binet, Henry E., Coleraine
 Blumenfeld, Albert, South St. Paul
 Byrnes, William A., Minneapolis
 Gallagher, Bernard, Waseca
 Gilroy, Earl W., Minneapolis
 Goss, H. Leroy, Minneapolis
 Halvorson, Walter, Mora
 Hawkins, Vincent J., St. Paul
 Iverson, Louis, Badger
 King, Owen, Minneapolis
 Klima, William W., Silver Lake
 Lembke, Carl, Neche, N. D.
 Levin, Oscar S., Hoffman
 Luehrs, Leslie, Pipestone
 Mayer, Roland G., New Ulm
 Melody, Margaret, Minneapolis
 Morrison, Harold E., Minneapolis
 Noreen, Harold A., Minneapolis
 Raadquist, Simon, Warren

*Students of combined seven-year course in science and medicine.

Ralke, Carl H., Excelsior
 Rowe, Paul H., Casselton, N. D.
 Shannon, Ray, Minneapolis
 Siedenberg, Alfred H., Elk Mound, Wis.

Siedenberg, Arthur G., Elk Mound, Wis.
 Snodgrass, Thomas J., Minneapolis
 Sund, Adolph G., Minneapolis,
 Vogtel, Melvin A., New Ulm

FIRST YEAR—43

Agnew, Allen T., Vincennes, Ind.
 Anderson, Frank, Ellsworth, Wis.
 Annon, Walter T., Anoka
 Armstrong, Victor, Minneapolis
 Arnson, Johan M., Eau Claire, Wis.
 Birkland, Olav N., Red Wing
 Bregel, Fred, Fairfax
 Brown, Lyle L., Crookston
 Buscher, Herbert, Lester Prairie
 Chisholm, Reginald, Chippewa Falls, Wis.
 Freed, Oscar J. R., Watertown
 Geer, Everett K., St. Paul
 Gill, John J., Minneapolis
 Groebner, Otto A., New Ulm
 Hovde, Rolf, Duluth
 Johnson, Arthur O., Minneapolis
 Kennicott, Robert H., Luverne
 Leavitt, John A., St. Paul
 McKeon, George, Montgomery
 McKinley, John C., Minneapolis
 Mack, Rellie G., Loyal, Wis.

Molander, Herbert A., St. Paul
 Morgan, George T., Stillwater
 Moriarty, Cecelia, St. Paul
 Nordin, Gustaf T., Minneapolis
 Pearson, Fritz R., Hudson, Wis.
 Pederson, Nellie C. E., Minneapolis
 Plankers, Arthur G., St. Paul
 Polak, Richard R., Minneapolis
 Power, John E., Duluth
 Ralston, Frank L., La Grande, Ore.
 Rank, Theron L., Dover
 Schmidt, George J., Lake City
 Schutt, Ray, Bremerton, Wash.
 Shapiro, Morse J., Minneapolis
 Smersh, Jerome, Owatonna
 Soloway, Herman M., Minneapolis
 Sweetser, Theodore H., Minneapolis
 Tanner, Chester O., Fairmont
 Timm, John A., Utica
 Weisman, Samuel A., Minneapolis
 Zeien, Maurice B., North Branch

Zetterstrom, Henrk, Princeton

THE SCHOOL FOR NURSES

THIRD YEAR, A—4

Ames, Margaret, Hutchinson
 Mark, Mary, St. Peter

Marvin, Mary, Zumbrota
 Skonnord, Olga, Minneapolis

THIRD YEAR, B—4

Burns, Bessie, Graceville
 Madsen, Christenia, Minneapolis

Schwarg, Caroline, Dodge Center
 Stewart, Lena B., Minneapolis

SECOND YEAR, A—4

Cornish, Mary E., Vernon Center
 Ofsthun, Olive I., Glenwood

Thompson, Barbara A., Glenwood
 Waters, Vera, Beatrice, Neb.

SECOND YEAR, B—3

Angle, Maude, Minneapolis

Gosman, Anna, Minneapolis
 Manger, Caroline, McIntosh

PRELIMINARY COURSE—4

Babcock, Lana, Minneapolis
 Greenwalt, Dorothy, Withrow

Lemstrom, Bera, Minneapolis
 Lindquist, Signa, Minneapolis

GRADUATES IN MEDICINE, 1911

Anderson, Francis W., Dickinson, N. D.

Barron, Moses, Minneapolis

B.S., '10, University of Minnesota

Craig, Russell, Souris, N. D.

Dedolph, Karl, St. Paul

Fulton, Philip R., Minneapolis

Geist, George A., Minneapolis

B.S., '09, University of Minnesota

Hengstler, Howard W., Willmar

Kelly, Paul H., St. Paul

Ph.C., University of Minnesota

Kremer, Walter John, Cold Springs

Larkin, Chandler C., Huron, S. D.

Leitch, Archibald, Minneapolis

Mitchell, Whiting B., Chehalis, Wash.

Olson, Charles A., St. Paul

Papez, James W., Atlanta, Ga.

Rumreich, Erhard A., Pisek, N. D.

Ruud, Magnus B., Fosston

B.A., University of North Dakota

Spear, Albert E., Owatonna

Ph.B., '05, Hamline University

Turnacliffe, Dale D., Waseca

Ziskin, Thomas, Minneapolis

HAMLIN UNIVERSITY GRADUATES

These students were taught in the College of Medicine and Surgery, University of Minnesota, and graduated by Hamline University, College of Physicians and Surgeons, in accordance with agreement of 1908.

GRADUATES OF 1908-9

Dickey, Robert Randolph, Minneapolis

Evarts, Miss Arrah B., Mantorville

Gelz, John James, Minneapolis

Ghostley, Fred J., Minneapolis

Ghostley, Mary C., Minneapolis

Gilkey, Seth E., Minneapolis

Haverstock, Arthur David, Minneapolis

Kaufhold, George F., St. Paul

Lommen, Clarence Edgar, Buxton, N. D.

McCarty, Edison Orin, Minneapolis

MacDonald, Daniel A., Wabasha

Schnache, Roy Alvin, St. Paul

Sewell, George Melville, Minneapolis

Skemp, Frank Scofield, Minneapolis

Thornby, Hallward J., Dawson

Trenkle, Henry Landalynn, Minneapolis

Vadheim, Alfred Lyman, Garrison, S. D.

Van Deboget, Lewis, Minneapolis

GRADUATES OF 1909-10

Clay, Frank H., Minneapolis

Love, George R., Preston

Petit, Leon J., Minneapolis

GRADUATES OF 1910-11

Dailey, William J., St. Paul

Goodheart, Charles J., Fargo, N. D.

Hedenstrom, Louis, H., St. Paul

Laurent, Antoine A., Minneapolis

Schumacher, Nicholas W., Minneapolis

Wooster, Arthur M., Minneapolis

ALUMNI COLLEGE OF MEDICINE AND SURGERY

INCLUDING YEAR 1910-11

- Abbott, Claude U., '04, Virginia
 Abbott, William P., '06, Duluth
 Adams, Bertram S., '01, Hibbing
 B.S., '98, University of Minnesota
 Adams, Rollin T., '93, Mantorville
 B.S., Carleton College
 Agnew, Anna M., '99, City Board of Health
 Laboratory, New York
 *Ahlstrom, Alfred E., '00, St. Peter
 Aitkins, Herbert B., '93, Le Sueur Center
 B.A., Manitoba University
 Alexander, Frank H., '97, St. Paul
 Alexander, Ida Mary, '08, Clarissa
 B.A., '05, University of Minnesota
 Alger, Edmund W., '02, Minneapolis
 Allen, Charles C., Jr., '10, Austin
 B.S., '07, Carleton College
 Allen, Harry W., '00, Minneapolis
 B.S., '95, M.S., '97, University of Minnesota
 Allen, Mason, '97, St. Paul
 Alley, Albert G., '05, Granger, Wash.
 Andersen, Arnt G., '04, Hillsboro, N. D.
 Anderson, August R., '91, Sioux City, Ia.
 Anderson, Carl A., '05, Santa Ysabel, Cal.
 Anderson, Christopher A., '92, Rush City
 Anderson, Edwin C., '97, Missoula, Mont.
 Anderson, Francis W., V. S., '11, Tacoma,
 Washington
 Anderson, Ludwig Wolmer, '04, Atwater,
 Wisconsin
 Anderson, Oscar H., '09, Plum City, Wis.
 Anderson, William S., '03, Warren
 Andrews, Roy Newberry, '08, Mankato
 Angell, William A., '95, Minneapolis
 Appleby, E. Villiers, '94, London, Eng.
 Arey, Hugh C., '02, Excelsior
 Argue, Geo. William, '01, Breckenridge
 Argue, Hiram S., '05, Tacoma, Wash.
 Armstrong, John M., '01, St. Paul
 Arneberg, John G., '05, Grand Forks, N. D.
 Aronsohn, David M., '05, Glasgow, Mont.
 *Arslanides, Michael T., '94, Caesarea, Asia
 Minor
 B.A., Anatolia College
 Artz, Carl P., '95, St. Paul
 Artz, Philip G., '05, Jamestown, N. D.
 Ashley, E. Mayo, '06, Missoula, Mont.
 Ashley, Paul L., '06, Wibaux, Mont.
 Aspelund, Joseph S., '06, Minneapolis
 Aubin, Marie Louise (Mrs. W. E. Aubin),
 '93, Racine, Wis.
- Aurand, William H., '01, Minneapolis
 Aurness, Peter A., '92, Minneapolis
 Austin, Wilford J., '05, Kimball
 Avery, Jacob Fowler, '99, Minneapolis
 Axilrod, David L., '03, Hutchinson
 Bacon, Harry P., '97, Milaca
 Bacon, Knox, '94, St. Paul
 Bailey, John Wm., '94, Seattle, Wash.
 Baillie, William F., '03, Hunter, N. D.
 *Baird, Mrs. Jas., (Petit, '94), Mpls.
 Baker, Ernest L., '09, Minneapolis
 Baker, Mary K., (Mrs. Dan. Baker) '00, St.
 Paul
 Bakke, Peter R., '92, Grantsburg, Wis.
 *Bakke, Peter H., '91, Kenyon
 Baldwin, Louis B., '97, Minneapolis
 Baldwin, Wm. P., '01, Casselton, N. D.
 Ball, Chas. R., '94, St. Paul
 B.A., Ohio Wesleyan
 Barclay, Alexander, Jr., '07, Cloquet
 Barney, Leon A., '09, Duluth
 B.S., '08, University of Minnesota
 Barre, William de la, '95, Minneapolis
 Barron, Moses, '11, Minneapolis
 B.S., '10, University of Minnesota
 Barsness, Nellie O., '02, St. Paul
 Bartron, Harry J., '06, Watertown, S. D.
 Bassett, Mary E., (Mrs. Chas. W. Bray), '95,
 Biwabik
 B.S., '93, University of Minnesota
 Batchelder, Edwin J., '93, New Richland
 Batcheller, Oliver T., '99, Brainerd
 Baxter, Stephen H., '02, Minneapolis
 B.A., '99, University of Minnesota
 Beaudoux, Henry A., '95, St. Paul
 Bebb, Rose A., '97, Seattle, Wash.
 B.L., '91, University of Minnesota
 Beckman, Emil H., '01, Rochester
 B.A., '94, Grinnell
 Beebe, Dan G., '96, Zamboango, Minanao,
 Philippine Islands
 Beede, Ethel R., '09, Houston, Tex.
 B.A., '04, University of Minnesota
 Beek, R. Hudson, '94, Lakota, N. D.
 Belden, George G., '04, Spokane, Wash.
 Benedict, Earle E., '01, Minneapolis
 Benham, Edward W., '95, Mankato
 Benjamin, Arthur E., '92, Minneapolis
 Bennett, Chas. E., '95, Aneta, N. D.
 Bennett, Oscar E., '00, Correll
 Bennion, Percival H., '02, St. Paul
 Benoit, Frank T., '05, Twin Falls, Idaho

*Deceased

- Benson, Geo. E., '01, Minneapolis
 Benson, Oscar T., '05, Glen Ulin, N. D.
 Benson, Theo. J., '04, Fromberg, Mont.
 Bergan, O. K., '91, Sacred Heart
 Bergh, L. M., '06, Montevideo
 Bernard, John A., '89, Minneapolis
 Best, Robert, '99, Mankato
 Bevans, Theodore F., '03, Waterbury, Conn.
 Bickford, Frank J., '02, Pine City
 Biedermann, Jacob, '04, Argyle
 B.S., '01, University of Minnesota
 Bigelow, Chas. E., '04, Madison Lake
 *Binder, Geo. A., '92, St. Paul
 Binger, Henry E., '10, Tulare, S. D.
 Biorstad, Gisle, '94, Minneapolis
 Birdsall, Albert T., '96, Brooklyn, N. Y.
 B.L., '93, University of Minnesota
 Birnberg, Tobias, '04, Campbell
 Bissell, Frank S., '02, Minneapolis
 Bjelland, Adolph O., '96, Mankato
 Black, William, '09, Tyndall, S. D.
 B.A., '03, Wabash College
 Blackman, Ernest L., '01, Stockton, Cal.
 B.S., Coe College, Ia.
 *Blais, Chas. '04, Minneapolis
 Blake, James, '01, Hopkins
 Blakely, Clement C., '09, Waseca
 Blanchard, H. G., '97, Waseca
 Blegen, Hallward M., '09, Minneapolis
 B.A., '04, Augsburg
 Bloom, Charles J., '08, Mora
 B.A., '04, Carleton College
 Bock, Rolland, '08, St. Paul
 Ph.C., '01, University of Minnesota
 Bockmann, Michael W. H., '03, Minneapolis
 Boehm, John C., '93, St. Cloud
 Bohland, Fuchs F. J., '91, Belle Plaine
 Boleyn, E. Sidney, '94, Stillwater
 Bolcom, George W., '94, Minneapolis
 Bomberger, Franklin J., '02, Mapleton
 Booker, Gertrude (Granger, Mrs. G. W.) '97, Rochester
 Booren, Clifton A., '09, Stillwater
 B.S., '07, University of Minnesota
 *Borchardt, Edward A., '93, St. Paul
 Bostrom, August E., '08, De Smet, S. D.
 B.S., '06, University of Minnesota
 Bouman, Herman A., '97, Minneapolis
 Boyd, Leon Mordrele, '08, Alexandria
 Boyum, Peter A., '07, Rushford
 Braasch, Wm. F., '03, Rochester
 B.S., '00, University of Minnesota
 Brabec, Frank J., '93, Perham
 B.S., '90, University of Minnesota
 Brand, William A., '04, Redwood Falls
 Brandt, Albert M., '05, Bismarck, N. D.
 Branton, Berton J., '05, Willmar
 Bratrud, Theo., '99, Warren
 B.A., '96, University of Minnesota
- Bray, Mrs. C. W., (Bassett, '95,) Biwabik
 B.S., '93, University of Minnesota
 Bray, Chas. W., '95, Biwabik
 B.A., '91, University of Minnesota
 Bray, E. R., '06, St. Paul
 B.A., '03, University of Minnesota
 Brede, Wm. G., '06, Minneapolis
 Phm.D., '98, University of Minnesota
 Brey, Frank, '10, Wabasha
 Brigham, Chas. F., '02, St. Cloud
 Brigham, Frank T., '05, Watkins
 Brimhall, Silas J., '02, Los Angeles, Cal.
 Brooks, Chas. N., '09, Minneapolis
 Brooks, George F., '00, Hibbing
 Brown, Charles E., '04, Highland, Kan.
 B.A.
 Brown, Harry, '96, Rolling Stone
 Brown, John C., '08, St. Paul
 B.A., '99, Leland Stanford University
 Brown, Paul F., '05, Minneapolis
 B.A., '02, University of Minnesota
 Brown, William G., '02, Fargo, N. D.
 Brown, Walter M., '02, St. Thomas, N. D.
 Brunelle, Adelaide M., '86, Cloquet
 Brush, Fred H., '05, N. Yakima, Wash.
 Bryant, Oliver R., '05, Minneapolis
 Buck, Carroll D., '97, Union, P. I.
 Buckley, Daniel, '98, Seattle, Wash.
 B.S., '95, University of Minnesota
 Buckley, John J., '09, Portland, Ore.
 Budworth, Benjamin F., '02, Shelly
 Buell, Mary C., '97, Cumberland, Md.
 Bulkley, N. C., '06, Eveleth
 Burch, Frank E., '97, St. Paul
 Burgan, James H., '99, Chicago, Ill.
 Burns, Catherine A., '87, Hopkins
 B.S., '79, University of Minnesota
 Burns, Herbert A., '08, Minneapolis
 Burns, M. Alpheus, '96, Milan
 Burns, Robert M., '05, St. Paul
 Bussen, L. H., '02, Richardton, N. D.
 Butler, David R., '94, Wilmot
 Butler, John, '03, Minneapolis
 Button, A. J., '06, Bowdle, S. D.
 Cahoon, Grace W., '97, Butte, Mont.
 Caine, Chas. E., '96, Morris
 Caldwell, James P., '09, Coleraine
 Caley, G. Ross, '00, Princeton
 Call, Alfred M., '03, Rugby, N. D.
 Callerstrom, G. W., '06, Dunnell
 B.A., '03, University of Minnesota
 Cameron, John A., '02, St. Paul
 Campbell, Albert A., '09, Ceylon, Wis.
 Campbell, Charlotte P., (Mrs. W. J. Pratt),
 '00, Gardner, N. D.
 Campbell, D. R., '05, Pullman, Wash.
 Campbell, George E., '95, Pasadena, Cal.
 Campbell, John E., '01, S. St. Paul
 B.S., '98, M.S., '99, University of Minn.

- Campbell, Lorne A., '04, Clear Lake, Wis.
 Campbell, Paul E., '03, St. Paul
 Campbell, Robert A., '96, Minneapolis
 Campbell, Robert W., '05, Swanville
 Canfield, Harry E., '06, Minneapolis
 Carlsen, E. L., '06, Tacoma, Wash.
 Carman, Chas. L., '97, St. Paul
 Carman, James E., '01, Detroit
 Carpenter, Carrol C., '97, Grand Rapids
 Cassel, Rufus J., '01, Mt. Vernon, Wash.
 Castle, Karl H. E., '85, St. Paul
 Cater, Getta M., (Mrs. G. C. Sweeting),
 '01, Morton Park, Ill.
 Catlin, John J., '03, Buffalo
 Cavanaugh, Jas. O., '97, St. Paul
 Cavanor, Frank T., '10, Minneapolis
 B.A., '03, University of Illinois
 Chamberlain, Henry W., '01, Bangor, Wis.
 Chambers, W. C., '05, Blue Earth
 B.S., '00, University of Minnesota
 Chapple, Chas. L., '98, Nachez, Wash.
 B.S., '92, University of Minnesota
 Chase, E. Frank, '05, N. Yakima, Wash.
 Chase, Ralph R., '89, Eau Claire, Wis.
 Cheleen, Sigfried, '06, Lindstrom
 Chesley, Albert J., '07, Minneapolis
 Chilgren, G. Arthur, '92, Burlington, Ia.
 Chilton, Leo W., '04, Idaho Falls, Idaho
 Chowning, Wm. M., '01, Minneapolis
 B.A., Johns Hopkins
 Christenson, Chas. R., '96, Starbuck
 Christianson, Andrew, '10, St. Paul
 Christison, James T., '01, St. Paul
 M.D., Long Island, Col.
 Clark, Howard S., '97, Minneapolis
 B.S., '95, University of Minnesota
 Clarke, Robert, '03, Plummer
 Claydon, Leonard E., '95, Red Wing
 Clement, L. O., '02, Lamberton
 B.S., '99, University of Minnesota
 Cleveland, Hiram E., '01, Burlington,
 Washington
 Coffin, Samuel D., '04, Erie, N. D.
 Cohen, H. A., '01, Minneapolis
 Cole, Wallace, '10, St. Paul
 Coleman, Fred B., '09, Carlos
 Ph.B., Hamline University
 Coleman, Harry M., '97, Barron, Wis.
 Conant, Harriet B., '91, (Mrs. J. H. Mc-
 Cloud), Hardwick, Vt.
 Condit, Wm. H., '99, Minneapolis
 B.S., '95, University of Minnesota
 Cook, Paul B., '00, St. Paul
 Coon, William F., '03, Coury, Kan.
 Corbett, J. Frank, '96, Minneapolis
 Cosgrove, Joseph H., '06, Nashwauk
 Coria, Leon J., '04, Taft, Mont.
 Corse, Chas. A., '97, Verndale
 Corwin, G. P., '89, Pomona, Cal.
 *Cotton, Henry, '94, Prescott, Wis.
 B.S., '90, University of Minnesota
 Coulter, Chas. F., '02, Wadena
 Coulter, Herbert, '03, Azuza, Cal.
 Cowles, Danforth C., '01, Minneapolis
 Coyngname, E. F., '87, Borneo, Mont.
 Craig, Russell, '11, Minneapolis
 Crewe, John E., '96, Rochester
 Critchfield, L. R., '09, Steele, N. D.
 B.S., '07, University of Minnesota
 Crommett, Herbert B., '96, Amery, Wis.
 Crossette, Geo. D., '04, Staples
 Cuff, Wm. S., '97, St. Paul
 Culver, Chas. F., '99, Sioux Falls, S. D.
 Cummings, John H., '02, St. Paul
 Current, Earl H., '07, Spokane, Wash.
 Cutts, George, '07, Minneapolis
 Cutts, Geo. A. C., '00, Grove City
 *Cutts, Rollin E., '93, Forest City
 B.S., '90, University of Minnesota
 Cutts, Mrs. R. E., (Smith), '91, Yankton, S. D.
 Dahleen, Henry E., '08, Granite Falls
 Dahlquist, Gustav W., '93, Lancaster
 *Dahlstedt, Nils G., '89, Port Wing, Wis.
 Danner, Edgar W., '95, New York City
 Darling, Walter H., '95, Hudson, Wis.
 Darms, Harry L., '92, Hector
 Dart, Leslie O., '01, Minneapolis
 Daugherty, Edwin B., '04, Pine City
 Daugherty, Louis E., '04, Eveleth
 Davidson, James, '92, Salt Lake City, Utah
 Davis, Frank W., '03, Kasson
 Davis, Frederick U., '02, Faribault
 B.S., '98, University of Minnesota
 Davis, Luther A., '01, Dalton
 Dawson, Albert M., '05, Dietz, Wyo.
 Day, Floyd McA., '01, Eugene, Ore.
 Dean, Frank W., '90, Council Bluffs, Ia.
 *Dean, Sidney W., '00, Minneapolis
 Dedolph, Karl, '11, St. Paul
 Delmore, John Leo, '09, Roseau
 B.S., '07, University of Minnesota
 Dennis, Warren A., '96, St. Paul
 B.L., University of Wisconsin
 Deslauriers, A. A., '03, Duluth
 Devine, John L., '04, Lansford, N. D.
 Dickman, Lester A., '01, Lismore
 Dickson, Thomas H., Jr., '10, St. Paul
 B.A., Macalester College
 Dittman, George C., '04, S. St. Paul
 Dix, George E., '04, Marshfield, Ore.
 Dodge, Albert A., '94, Great Falls, Mont.
 B.S., '91, University of Minnesota
 Dodge, Warren M., '93, Farmington
 B.S., '90, University of Minnesota
 Dohm, Chas. L., '96, St. Paul
 Donovan, John Jos., '01, Eden Valley

- Doolittle, Leroy E., '09, St. Paul
 B.A., '05, University of Minnesota
 Doyle, John W., '01, Minneapolis
 Drake, Charles R., '09, Minneapolis
 Drake, Frederick A., '96, Lanesboro
 Drechsler, Herman A., '02, St. Paul
 Drew, George F., '00, Crary, N. D.
 Dugan, Rollo C., '90, Eyota
 Dunn, John T., '04, Wykoff
 Durand, Jay I., '05, Atlantic City, N. J.
 B.A., '02, University of Minnesota
 Dutton, Charles E., '89, Minneapolis
 Dyar, Burt A., '05, De Smet, S. D.
 Earl, George A., '09, St. Paul
 B.A., '06, University of Minnesota
 Earl, Robert O., '96, St. Paul
 Eberlein, Edward A., '01, Glenwood
 Eby, Cyrus B., '93, Spring Valley
 Eby, John R., '93, Elko, Nevada
 Edgerton, Wm. M., '96, Faulkton, S. D.
 *Edholm, Edward A., '89, Minneapolis
 Edlen, Emil A., '92, Hayes, S. D.
 Edsall, Jos. L., '92, Bradley, S. D.
 Edward, George, '97, Midland, S. D.
 Egan, John M., '07, Minneapolis
 Egge, Thron S., '93, Moorhead
 Eisengraeber, Gustav A., '01, Granite Falls
 Eklund, Elmer J., '07, Young America
 Eklund, John J., '85, Duluth
 Ellis, Benj. Jas., '00, Latah, Wash.
 *Ellis, Burton K., '03, Greeley, Colo.
 Ely, Orriman S., '06, Wallace, S. D.
 Emanuel, Henry J., '07, El Paso, Texas
 Emmerson, William S., '04, Mayer
 Endress, Karl J., '99, St. Paul
 Engstrom, Fred Alonzo, '08, Cannon Falls
 Erb, Frederick A., '02, Minneapolis
 Erdmann, Charles A., '93, Minneapolis
 Erickson, John G., '92, Minneapolis
 Esser, John, '08, Perham
 Estrem, Carl O., '07, Madison, S. D.
 Eustermann, George Bysshe, '08, Rochester
 Evans, Owen, '01, Bangor, Wis.
 Ewing, C. Francis, '01, Wheaton
 *Fanset, John J., '96, Milbank, S. D.
 Farmer, John C., '95, McKinley
 Farmer, Sidney S., '01, Minneapolis
 Farrand, Corydon, '93, Oronoco
 Farrish, Robert C., '01, Sherburne
 Ferguson, Jas. Cory, '01, St. Paul
 Ferguson, William J., '99, Minneapolis
 Field, Merton, '02, Minnesota Lake
 Fiksdal, Mads J., '09, Bristol, S. D.
 *Finstad, Gustaf J., '93, Menomonie, Wis.
 Fisher, Otto F., '97, Houston
 Fitzgerald, Don F., '03, Minneapolis
 Fjelde, Hermann O., '95, Abercrombie, N. D.
 Fjelstad, Carl A., '92, Glenwood
 Fligman, Louis H., '01, Helena, Mont.
 *Ford, Corydon L., '90, Ann Arbor, Mich.
 Forrest, Charles G., '99, Bagley
 Fortier, Edward L., '08, Little Falls
 Foshager, Henry T., '09, St. Paul
 B.S., '05, St. Olaf College
 *Foster, Alson James, '01, St. Paul
 Foster, Bainbridge W., '07, Mandan, N. D.
 Foster, Willard C., '02, Sunrise, Wyo.
 Fowler, Paul H., '03, Plain, Wis.
 Franchere, Frederick E., '90, Sioux City, Ia.
 Frasier, George W., '05, Minneapolis
 Freeberg, Harry M., '04, Watertown, S. D.
 Freeman, Charles D., '04, St. Paul
 Freeman, George H., '05, St. Peter
 French, Edwin J., '00, Plainview
 French, Ernest A., '03, Campbell
 French, Leigh H., '94, New Rochelle, N. Y.
 Frost, William S., '04, Spokane, Wash.
 B.S., '01, University of Minnesota
 Fullerton, Ellen C., '03, Shanghai, China
 B.S., '00, University of Minnesota
 Fulton, Philip R., '11, St. Paul
 Fulton, Thos. C., '02, White Bear
 Gaard, Rasmus R., '04, Radcliffe, Ia.
 Gaffney, Thomas J., '97, Lakeville
 Gaines, Everett C., '99, Buffalo Lake
 Gallagher, Patrick J., '04, Spokane, Wash.
 Gallup, Glenn D., '04, River Falls, Wis.
 Gans, Edward M., '05, Eveleth
 Garber, Lou M., '93, Jasper
 Gardner, Ray, '09, St. Paul
 Garrison, J. Frank, '00, Oldham, S. D.
 Gates, Chester E., '04, Goodhue
 Gates, Joseph A., '95, Kenyon
 Gauger, Edward C., '05, St. Paul
 *Geiger, John, '96, Osceola Mills, Wis.
 Geist, Emil S., '00, Minneapolis
 Geist, Geo. A., '11 St. Paul
 B.S., '09, University of Minnesota
 George, Jas. Woodward, '02, Aitkin
 B.S., '96, University of Minnesota
 Germon, Chas., '95, Balaton
 Gerrish, William A., '96, Jamestown, N. D.
 Geyerman, Peter T., '99, Worthington
 Gibbon, Luther L., '97, Lowry
 *Gibbs, Thos. C., '91, Lake City
 Giere, Eric O., '92, Madison
 *Gilbertson, Julius C., '91, Minneapolis
 Gilfillan, James S., '97, St. Paul
 Gilkinson, Andrew J., '93, Osakis
 Gillette, Arthur J., '03, St. Paul
 *Glenn, William, '93, Minneapolis
 Glycer, Richard T., '09, Marble
 B.A., '07, Carroll College
 Goddard, Nathan A., '97, Sand Point, Idaho
 *Godfrey, Harvey B., '02, Minneapolis
 Goehrs, Henry W., '05, Melrose
 Goldsworthy, William, '97, Two Harbors
 Goodman, Minerva, '02, Stockton, Cal.

- *Goodrich, Judd U., '95, St. Paul
 Gowenlock, Harry J., '04, Gardner, N. D.
 *Grafton, Guy A., '99, Hayward, Wis.
 Grangaard, Henry O., '08, Douglas, N. D.
 B.A., Luther College
 Granger, Mrs. G. W., (Booker) '97, Rochester
 Grant, Mrs. E. R., (True) '94, El Reno, Okla.
 Grant, Mrs. Frank (Wyman) '10, Portland, Ore., B.A., '00, Carleton
 Gray, Clyde E., '03, Rush City
 Gray, George A., '98, Spokane, Wash.
 B.A., '95, University of Minnesota
 Greaves, Jay J., '09, Glencoe
 Greeley, Liston Q., '96, Duluth
 Green, Eugene K., '03, Minneapolis
 B.A., '95, University of Minnesota
 Green, George H., '06, Reardon, Wash., B.S., '99, University of Minnesota
 Greene, Charles Lyman, '90, St. Paul
 Griebenow, Frederick, '09, Minneapolis
 B.A., '06, University of Minnesota
 Griffin, Miriam E., '05, Malate, Manila, P. I., B.A., '00, University of Minnesota
 Griswold, Frank E., '97, Hoffman
 Grout, Samuel E., '99, Bessemer, Ala.
 Guilford, Harry M., '98, Minneapolis
 B.S., '95, University of Minnesota
 Gunn, Frank H., '95, Eau Claire, Wis.
 Gunz, A. N., '04, Center City
 Ph.C., '99, University of Minnesota
 Guthrie, Charles E., '02, Seattle, Wash.
 B.A., '91, University of Minnesota
 Guthrie, John DeMott, '97, Seattle, Wash.
 E.E., '93, University of Minnesota
 Haas, Chas. A., '94, St. Paul
 Hack, Chas. W., '97, Minneapolis
 Hagaman, George K., '03, Anoka
 Hagen, Olaf J., '06, Moorhead
 Haggard, George D., '93, Minneapolis
 Halgren, Harry A., '97, Watertown
 Hall, Charlotte C., '99, St. Paul, (Mrs. J. O. Hall)
 Hammerel, Ambrose, '05, Glendive, Mont.
 Hammes, Ernest M., '06, St. Paul
 Haney, Claude L., '06, Duluth
 B.A., '03, University of Minnesota
 *Hanscom, William H., '89, Minneapolis
 Hanson, Marius, '94, Hendrum
 Hanson, Martin O., '01, Dassel
 Harden, Kate C., '03, Wyoming, (Mrs. F. A. Helmuth)
 Hare, Earle R., '00, Minneapolis
 Harrington, Charles D., '95, Minneapolis
 Harrison, Elmer E., '97, West Concord
 Hart, Alfred B., '03, Canton
 Phm.D., '94, University of Minnesota
 Hart, Milan J., '95, LeRoy
 Hartshorn, Willis E., '98, New Haven, Conn.
 B.Ph., Colorado
 Hartzell, Thomas B., '94, Minneapolis
 D.D.S., '93, University of Minnesota
 Haskell, A. Dair, '00, Alexandria
 Haugen, Gilbert, '05, Battle Lake
 Haugseth, Enoch, '02, Twin Valley
 Phm.D., '94, University of Minnesota
 Haverfield, Addie R., '95, Minneapolis
 Hayes, James M., '10, Browns Valley
 B.S., '04, Carleton College
 Hayes, Michael F., '09, Minneapolis
 B.S., '07, University of Minnesota
 Haynes, Frederick E., '99, Minneapolis
 Hazeltine, Harry H., '01, Ashland, Wis.
 Head, George D., '95, Minneapolis
 B.S., '92, University of Minnesota
 Healy, Raymond T., '09, Minneapolis
 Heath, Albert C., '94, St. Paul
 B.A., Dartmouth
 Hebard, Sue, '03, Mondovi, Wis.
 Hedback, Axel E., '97, Minneapolis
 Heidekker, Arne A., '02, St. Paul
 Henze, Charles F., '96, Clifford, N. D.
 Helland, John W., '05, Maynard
 Helmuth, Mrs. F. A., (Harden) '03, Wyo.
 Hemingway, Ernest E., '08, Seattle, Wash.
 B.A., '98, Ripon; M. A., '03, Ph.D., '04, University of Minnesota
 Hendrickson, Hans W., '93, Kansas City, Missouri
 Hendrickson, J. F., '05, Fertile
 Hengstler, Howard W., '11, Willmar
 Hennemuth, John L., '90, Waterford, Cal.
 Henry, Anna M., '99, Pattonsburg, Mo.
 Henry, Fannie J., '99, Kansas City, Mo.
 Hensel, Charles N., '08, St. Paul
 Hesselgrave, Sherman S., '94, St. Paul
 Hielscher, Julian A., '91, Mankato
 Higgins, Irving W., '04, Berkeley, Cal.
 Higgins, John H., '03, Minneapolis
 Higgins, John T., '94, Morgan Hill, Cal.
 B.C.E., '90, University of Minnesota
 *Hilbert, Ferdinand, '92, Albany
 Hilbert, Pierre A., '93, Melrose
 Hilger, Andrew W., '05, St. Paul
 Hilger, David D., '05, St. Paul
 Hill, Eleanor J., '02, Minneapolis
 Hirschfield, Adolph, '93, Minneapolis
 Hitchings, William S., '08, Belgrade
 Hoff, Alf., '10, St. Paul
 B.S., '08, University of Minnesota
 Hoff, Peder A., '00, St. Paul
 Hoffman, Walter F., '04, Seattle, Wash.
 Hoffman, William L., '04, Charles City, Ia.
 Hoidale, Andrew D., '04, Tracy
 Hoiland, Angell S., '10, Benson
 B.S., '08, University of Minnesota
 Holbrook, John S., '96, Mankato

- Holmes, Walter B., '94, Ada
B.S., '88, University of Minnesota
- Holst, Claude F., '01, Little Falls
- Holst, John B., '95, Little Falls
- Holte, Halvor, '93, Crookston
- Hopkins, Mary P., '01, White Bear Lake
- Hotvedt, Ingvald, M. J., '99, Muskegon, Mich.
- Houston, Charles A., '01, Park Rapids
- Hovde, Anders G., '03, Superior, Wis.
- Howard, Seth E., '93, Robbinsdale
- Hubbard, Frederick G., '03, Cayuga, N. D.
- Hubert, R. Ignatius, '98, St. Cloud
- Hughes, Helen, '96, Mankato
- *Huhn, Carl, '98, Minneapolis
B.A., '95, University of Minnesota
(M.D. post ob.)
- *Humiston, Ray, '03, Worthington
- *Hutchinson, Henry J., '04, Lynn, Mass.
- Huxley, Fred R., '00, Faribault
- Hyde, Mrs. W. G., (Merrill) '96, Miles City, Mont.
- Hynes, John E., '04, Minneapolis
Ph.C., '00, University of Minnesota
- Hyslin, Evan, '00, Kindred, N. D.
- Istrup, Francis, '94, Grasston
- Istrup, Orlando, '99, Cokato
- Irish, Palmer H., '00, Walker
- Irvine, Harry G., '03, Minneapolis
- Ivers, Martin U., '02, Abercrombie, N. D.
- Iverson, Lewis U., '97, Christine, N. D.
- Jacobs, Johannes C., '05, Willmar
- Jacobson, Leonard H., '05, Seattle, Wash.
- *James, Ralph C., '05, Mankato
- Janson, Eliv, '92, Seattle, Wash.
- Janson, Ivar, '92, Seattle, Wash.
- Jennings, George, '07, Missoula, Mont.
- Jennison, John E., '94, DeLamar, Nev.
- Jensen, James C., '03, Hendricks
- Jenson, Charles A., '02, Searchlight, Nev.
- Jenson, Jens Marius '02, Minneapolis
- Jewell, Emory L., '02, Shoshone, Wyo.
- Johnson, Anders E., '03, Madison
- Johnson, Andrew E., '91, Cloquet
- Johnson, Asa M., '96, St. Paul
- Johnson, Carl M., '10, Pelican Rapids
- Johnson, Edwin M., '98, Albuquerque, N. M.
B.L., '95, University of Minnesota
- Johnson, Hans, '04, Kerkhoven
- Johnson, Herman M., '01, Dawson
- Johnson, Nimrod A., '05, Minneapolis
- Johnson, Oscar V., '05, Sebeka
B.A., '02, University of Minnesota
- Johnson, Selmer M., '09, New Richland
- Johnston, Edward James, '08, St. Cloud
- Johnston, William W., '02, Janesville
- *Jones, Chas. H., '90, Temple, Ariz.
- Jones, Elmer M., '07, St. Paul
- Jones, Herbert W., '01, Minneapolis
- Judd, Edward S., '02, Rochester
- Judson, William E., '07, West Duluth
- Juliar, Richard O., '03, Mountain Lake
- Julien, Albert Edward, '10, Braham
B.A., '03, Hamline University
- Justice, Oswald M., '97, Los Angeles, Cal.
- Kaess, Andrew J., '03, Fargo, N. D.
- Kane, Jos. P., '05, Delano
- Kankel, Otto Wm., '00, Upland, Cal.
- Karn, Bert R., '07, Ortonville
- Kearney, Percy F., '04, Glen Ulin, N. D.
- Keene, Ralph K., '97, Spokane, Wash.
- Kelly, Paul H., '11, St. Paul
Ph.C., '04, University of Minnesota
- Kellogg, Paul M., '09, Fargo, N. D.
- Kelly, S. M., '05, Canby
- Kelly, Thomas C., '04, Mankato
- Kelsey, Carleton G., '07, Denver, Colo.
B.A., '04, University of Minnesota
- Kennedy, Jane F., '00, Minneapolis
- Kibbe, Orel A., '05, Hampton, Ia.
- Kiefer, Michael A., '04, Sleepy Eye
B.S., '01, University of Minnesota
- Kiehle, F. A., '01, Portland, Ore.
B.A., '94, University of Minnesota
- Kirk, Geo. C., '96, East Grand Forks
- Kirkwood, Samuel M., '92, St. Paul
- Kistler, Chas. M., '93, Minneapolis
- Kittelson, Theo., '02, Fergus Falls
- Kjelland, Andrew A., '10, Rushford
- *Kjos, Knute A., '89, Minneapolis
- Klein, Henry N., '05, Hebron, N. D.
- *Klemer, Carl A., '04, Faribault
- Klove, Lewis, '03, Minneapolis
B.L., '99, University of Minnesota
- Knauff, Muhlenberg K., '95, Two Harbors
- Knight, Ray R., '06, Minneapolis
B.A., '03, University of Minnesota
- *Koch, John C. T., '93, Minneapolis
- Koch, John C., '02, Blackduck
- Kohler, Christian H., '98, Minneapolis
- Koivupalo, Edward H., '95, Laurium, Mich.
- Koren, Finn, '01, Madison
B.A., '98, University of Minnesota
- Kranz, Martin, '05, Mandan, N. D.
- Kremer, Walter John, '11, Minneapolis
- Krueger, Louis W., '96, Mapleton
- Kuhlmann, August, '05, Melrose
- Kurz, John W., '09, Clearwater
- Kuth, Joseph R., '04, Duluth
- Labbitt, LaRoy H., '07, Enderlin, N. D.
- Lamb, H. L., '02, Sauk Center
- Landen, F. G., '94, Stillwater
- La Rose, V. G., '01, Mandan, N. D.
- Larkin, Chandler C., '11, Huron, S. Dak.
- Larsen, Anders D., '93, Herman
- Larsen, Martin, '09, St. Paul
B.S., '07, University of Minnesota

*Deceased.

- Larsen, Oscar O., '07, Zumbrota
A. B.
- *Larson, Frank E., '02, Winthrop
- Law, Arthur Ayer, '94, Minneapolis
- Lawrence, Edward J., '08, Spokane, Wash.
- Leavitt, Frederick, '94, St. Paul
- Lee, Wm. P., '94, Northfield
- Leitch, Archibald, '11, Minneapolis
- Lees, R. B., '01, White, S. D.
- Lemstrom, Jarl F., '07, Minneapolis
- Lenfest, J. W., '03, Ambrose, N. D.
- Lenont, Chas. B., '99, Virginia
- Le Vasseur, Irma R., '00, Quebec, Can.
- *Levinson, Archibald E., '01, Minneapolis
- Lewis, Wm. W., '02, St. Paul
- Liedloff, Adolph G., '02, Mankato
- Liland, Ragnvald, '95, Kenyon
- Limburg, Albert, '03, Bowbells, N. D.
- Lind, Alfred, '91, Minneapolis
B.S., '89, University of Minnesota
- Lindberg, Arvid C., '08, Finlayson
- Lindstrom, Josephine, (Mrs. R. W. Stickel-
berger), '03, Oberon, N. D.
- *Linjer, Ole E., '89, Minneapolis
- Linneman, Nicholas L., '02, Duluth
- Linner, H. P., '09, Minneapolis
B.A., '02, Gustavus Adolphus College
- Linton, Laura A., '00, Rochester
B.S., '99, University of Minnesota
- Litzenberg, Jennings C., '99, Minneapolis
B.S., '94, University of Minnesota
- Loberg, Adolph E., '01, Minneapolis
- Loe, A. O., '97, Seattle, Wash.
- Lohrbauer, Ejner, '02, Lakota, N. D.
- Lommen, Andreas P., '95, Lanesboro
- Loomis, Earl A., '07, Somers, Mont.
B.A., '04, University of Minnesota
- Ludemann, A. H., '06, St. Michaels
- Ludtke, Gustav H., '99, Fairmont
- Lund, Axel L. B., '06, Dawson
- Lundmark, Lambert, '04, Ladysmith, Wis.
- Lyman, Fred V., '03, Thompson, N. D.
- Lynde, Roy, '05, Ellendale, N. D.
- Lyng, John, '90, Alexandria
- Lysne, Henry, '10, Minneapolis
B.S., '06, St. Olaf's College
- McCarthy, W. F., '89, Maple Lake
- McCloud, C. Naumann, '01, St. Paul
Phm.G., '95, University of Minnesota
- McCloud, Mrs. J. H., (Conant) '91, Hard-
wick, Vermont
- McClung, Alberta V., '97, St. Paul
- McCreery, Chas. R., '02, Tacoma, Wash.
- McCreery, W. B., '02, Tacoma, Wash.
- MacDonald, Irving C., '02, Minneapolis
- McDonell, Wm. N., '03, Washington, D. C.
- McEwan, Samuel W., '10, Washington,
D. C.
- McGroarty, John J., '07, Easton
- McGuigan, Henry Thomas, '01, Red Wing
- McIntyre, Philip H., '09, St. Paul
- McKibben, H. E., '04, Hector
- McKinnon, J. J., '93, Wadena
- McLaughlin, Ernest W., '96, Willmar
- McLaughlin, J. E., '06, Winchester, Idaho
- McMahon, Chas. G., '06, Copper Hill, Tenn.
- McMillan, Mary A., '07, Spokane, Wash.
- McNerthney, J. B., '99, Tacoma, Wash.
- Mackel, Bertha K., '99, Ada
- Maertz, Will Francis, '08, New Prague
- Magnusson, Gustav A., '08, Minneapolis
B.A., University of New Mexico
- Magnusson, Herman V., '03, Battle Lake
- Makinon, H. A., '03, Oakland, Cal.
- Maland, Clarence, '07, Minneapolis
B.A., '04, University of Minnesota
- Maloney, Thos. J., '01, St. Paul
- Manley, James R., '08, Niagara, N. D.
- Manson, F. M., '99, Worthington
B.S., '94, University of Minnesota
- Marshall, Nelson H., '92, Chaska
- Martin, Thomas R., '07, Duluth
B.A., '04, University of Minnesota
- Maschger, Albert P., '05, St. Paul
- Mathiesen, George B., '01, Evansville
- Matthews, Justus A., '05, Rochester
- Matthieu, A. L., '05, South Bend, Wash.
- Mattson, John A., '04, Carver
- Maurer, Edward L., '04, Brownston
- Maxeiner, Stanley R., '09, Minneapolis
- Mayer, L. P., '00, Hudson, Wis.
- Mayland, Louis L., '96, Ryder, N. D.
- Mayland, Martin L., '92, Faribault
- Meckstroth, Chas. W., '95, Brandon
- Meckstroth, Louis W., '93, Wahpeton, N. D.
D.D.S., '91, University of Minnesota
- Mee, Patrick H., '03, Gaylord
- Meighen, J. W., '96, Ulen
- Melby, Benedik, '03, Blooming Prairie
- Merrill, James E., '96, Amboy
- Merrill, Rose M., (Mrs. W. G. Hyde), '96,
Miles City, Mont.
- Mesker, Geo. H., '96, Olivia
- Metcalf, James N., '06, Monticello
- Meyer, E. L., '05, Minneapolis
- Meyerding, Edward A., '02, St. Paul
- Meyerding, Henry W., '09, St. Paul
B.S., '07, University of Minnesota
- Midford, Gunlauger, '04, Port Townsend,
Wash.
- Miller, Arthur W., '97, St. Paul
- Miller, H. W., '06, Jamestown, N. D.
- Millet, Josiah L., '02, Seattle, Wash.
- *Millet, Melvin C., '95, Rochester
- Milner, Augustus F., '09, Berlin, Germany
- Miner, Clarence J., Manila, P. I.
- Mitchell, Whiting B., '11, Chehalis, Wash.
- Moen, Johannes K., '93, Minneapolis

*Deceased.

- Mohn, Frederick V., '92, San Diego, Cal.
 Moir, W. W., '06, Minneapolis
 Moore, Albert H., '97, New Rochelle, N. Y.
 B.S., '95, University of Minnesota
 Moore, Charles Ulysses, '10, Staples,
 B.A., University of Texas
 Moore, George W., '92, Hopkins
 Moren, Edward, '06, Minneapolis
 Morrill, Robert A., '05, Sidney, Mont.
 Mortensen, Nels G., '09, St. Paul
 Movius, Arthur J., '04, Billings, Mont.
 Muir, Edwin S., '94, Winona
 Munns, John F., '03, Seattle, Wash.
 Munro, Alonzo T., '97, Kalispell, Mont.
 Murphy, Ignatius J., '09, Duluth
 B.S., '07, University of Minnesota
 Nelson, Henry S., '93, Minneapolis
 Nelson, Kent, '00, Whipple Barracks, Ariz.
 Nelson, Louis A., '96, St. Paul
 Nelson, Melvin S., '08, Dawson
 B.S., '06, University of Minnesota
 Nessa, N. J., '05, Chicago, Ill.
 Nevitt, Orme R., '00, Raymond, Wash.
 Newgord, Julius G., '03, Roslyn, Wash.
 Newman, Gustavus A., '95, New London
 Nicholson, Daniel A., '97, Seattle, Wash.
 Nicholson, Elmer, '05, Minneapolis
 Nicholson, Joseph, '03, Brainerd
 Nickerson, Bernard S., '03, Glencoe
 B.S., '99, University of Minnesota
 Nickerson, Margaret L., '04, Minneapolis
 Nickerson, Winfield S., '05, Hoffman
 Nielson, Niels, '06, Denmark
 Ph.C., '02, University of Minnesota
 Nordin, Charles G., '10, Brainerd, Minn.
 B.S., '08, University of Minnesota
 *Norred, William A., '02, Chicago
 Norton, Harvey G., '00, St. Paul
 Noth, Henry W., '03, Minneapolis
 Nuzum, Helen B., '95, St. Louis, Mo.
 Nyquist, Jacob E., '05, Cloquet
 O'Brien, Henry B., '06, Tacoma, Wash.
 *O'Connor, Dennis F., '90, Maxbass, N. D.
 O'Connor, John V., '95, St. Paul
 *O'Connor, Timothy, '90, Annandale
 Ohage, Justus Jr., '10, Rochester
 Olander, J. Edwin E., '04, St. Paul
 *Old, Herbert W., '03, St. Paul
 Olsen, Sterling H., '01, Milaca
 Olson, Chas. A., '11, St. Paul
 Olson, George, '04, U. S. S. Galveston
 Olson, John W., '00, Troy, Idaho
 Olson, Olaf A., '02, Minneapolis
 Olson, William P., '09, St. Paul
 O'Malley, William P., '02, St. Paul
 Oppegard, Manford, '10, Madison
 B.S., '08, University of Minnesota
 Oppliger, Gottlieb, '95, Warroad
 Osborn, Anna Lida, '00, Mankato
 Ostergren, Edward W., '09, St. Paul
 Owen, George B., '00, Butte, Mont.
 Oyen, Martin, '09, Ellsworth, Wis.
 *Palmquist, John E., '96, Princeton, Ill.
 Papez, James W., '11, Atlanta, Ga.
 Parker, Harvey G., '01, Portland, Ore.
 Parker, Owen W., '00, Ely
 Parrott, Byron W., '97, Long Prairie
 Parsons, George E., '05, Elk River
 Parsons, Joseph G., '98, Sioux Falls, S. D.
 Patton, Frederick J., '99, Duluth
 Paulsen, Edward L., '09, Hanska
 B.S., '07, University of Minnesota
 Peabody, Percy D., '02, Webster, S. D.
 Pearce, Nay O., '05, Hibbing
 Pederson, Harold, '07, Twin Valley
 Pederson, Reuben M., '06, Minneapolis
 Perkins, George A., '97, Dickinson, N. D.
 Perry, Clarence G., '09, St. Paul
 B.S., '07, University of Minnesota
 Perry, Gentz, '97, Amery, Wis.
 Peterson, John R., '97, Willmar
 Peterson, Olaus L., '05, Kokato
 Peterson, Victor, '06, Cokato
 Pettit, Charles W., '03, Minneapolis
 *Pettit, Loretta J., '94, Minneapolis
 Phelan, Richard J., '03, Minneapolis
 Phillips, George W., '89, Butte, Mont.
 Phillips, Wm. H., '94, Jordan
 Pineo, William B., '85, Minneapolis
 Piper, Monte C., '10, Sanborn
 *Pitblado, John D., '96, Minneapolis
 Platt, John J., '95, St. Paul
 Poehler, Franklin T., '96, Minneapolis
 B.S., '93, University of Minnesota
 Poppe, Frederick H., '07, Minneapolis
 B.A., '04, University of Minnesota
 Porter, Oliver M., '05, Atwater
 Ph.C., '02, University of Minnesota
 Powell, Charles B., '94, Madison
 Pratt, Chelsea C., '06, Mankato
 Pratt, Mrs. W. J., (Campbell), '00, Gardner, N. D.
 Preine, Irving A., '10, Minneapolis
 Preisinger, Joseph W., '04, Renville
 Pretlow, Clotilde L., '95, Fairmount, Ind.
 Prim, Joseph A., '99, Comfrey
 Prinzing, Jacob, '01, Ontario, Ore.
 Putnam, Catherine E., '01, St. Paul
 Quain, Eric P., '98, Bismarck, N. D.
 Quist, Henry W., '07, Minneapolis
 Ramaley, Louis, '05, St. Paul
 Ramsey, Walter R., '96 St. Paul
 Ramstad, Niles O., '99, Bismarck, N. D.
 Rankin, Arthur A., '00, South Haven
 Ransom, Edward M., '04, Minot, N. D.
 *Ranson, George, '95, Dodge Center
 Ranson, Mary E., (Mrs. Frank Strickler)
 '98, Sleepy Eye

*Deceased.

- Read, Harry K., '99, Hibbing
 Reed, Chas. A., '98, Minneapolis
 B.S., '95, University of Minnesota
 Rees, Soren P., '97, Minneapolis
 B.S., '95, University of Minnesota
 Regner, J. A., '89, Minneapolis
 Reilly, James J., '86, Milton, N. D.
 Reimstad, Christian S., '96, Brainerd
 *Reimstad, Sven S., '95, Minneapolis
 Reiter, Henry W., '93, Shakopee
 Reynolds, James S., '05, Minneapolis
 Ribble, George B., '04, La Moure, N. D.
 B.A., '01, University of Minnesota
 Rice, C. P., '06, Breckenridge
 Rice, Geo. D., '03, Pipestone
 Richards, Henry Raoul, '00, Waterville,
 Wash.
 Richards, Wm. G., '04, Hardin, Mont.
 Richmond, Chas. D., '05, Windom
 Ridgway, Alfred M., '90, Annandale
 Ringnell, Carl J., '91, Minneapolis
 Ringnell, Frank O., '95, Moline, Ill.
 Ritchie, Harry P., '96, St. Paul
 Ph.B., Yale
 Roadman, Ira McC., '98, Onamia
 Roan, Carl Martin, '08, Minneapolis
 B.A., Augsburg
 *Robbins, Ray P., '04, Portland, Ore.
 Robertson, A. W., '09, Litchfield
 Robitshek, Emil, '03, Minneapolis
 Rodgers, Charles L., '07, Minneapolis
 Rogers, James L., '05, Newport, Wash.
 Rogers, J. T., '91, St. Paul
 Rose, Frank R., '01, Spokane, Wash.
 Rose, Mrs. C. L. (Turner '95), Spokane,
 Wash.
 Rosen, Samuel, '04, Minneapolis
 Rosenthal, Ignatius P., '07, Canal Zone,
 Panama
 Rothschild, Harold J., '05, St. Paul
 Rothwell, William P., '92, Pawtucket, R. I.
 Rousseau, Victor, '05, Maple Lake
 Rowe, Olin W., '03, Duluth
 Rudell, Gustaf L., '06, Plaza, N. D.
 B.A., '03, University of Minnesota
 Rulien, Frank W., '97, Joliet, Ill.
 Rumreich, Erhard A., '11, Pisek, N. D.
 Russell, Clarence W., '03, Denver, Colo.
 Ruud, Magnus B., '11, Fosston
 B.A., University of North Dakota
 Ryan, Dennis E., '08, Shakopee
 B.A., St. Thomas College
 Ryley, Marie J., '95, Minneapolis
 Sanborn, Courtland R., '07, Alexandria
 Sanford, James A., '01, Farmington
 Satersmoen, Theodore, '10, Lac qui Parle
 Savage, Francis J., '01, St. Paul
 Sawyer, Herbert P., '95, Goodhue
 Scace, Lee A., '07, Centralia, Wash.
 *Schacht, Fred E., '03, Seattle, Wash.
 Schaleben, Henry O., '03, Lake Benton
 Schmidt, Henry A., '09, Westbrook
 Schmidt, Walter R., '03, Chisholm
 Schneider, Edwin H., '10, Rochester
 Schneider, Henry A., '01, Jordan
 Schneider, John P., '06, Greene Isle
 Schoonmaker, Edward P., '99, Mercedes,
 Tex.
 Schuldt, Fred C., '03, St. Paul
 Schulze, Albert G., '04, Duluth
 Schutt, John P., '06, Bremerton, Wash.
 Seaberg, Simon P., '06, Spokane, Wash.
 Seashore, David E., '02, Duluth
 Seashore, Gilbert, '02, Minneapolis
 Seham, Max, '10, Minneapolis
 Senkler, George E., '92, St. Paul
 Serkland, John C., '00, Rothsay
 *Setnan, John M., '99
 Sewall, Ralph J., '95, Crosby
 Shaleen, Arthur W., '02, Hallock
 Shaw, Albert Wm., '99, Buhl
 Shellman, John L., '03, Nashwauk
 Sheppard, Fred, '95, Hutchinson
 Sheppard, Prosper E., '91, Hutchinson
 Sherwood, George E., '94, Kimball
 Siemens, Abram, '90, Mountain Lake
 Simons, Jalmar H., '10, Waseca
 B.S., '08, University of Minnesota
 Simpson, James Kidd, '84, Juneau, Alaska
 Slipper, Halfdan, '95, Fosston
 Smith, Arthur E., '05, Minneapolis
 Smith, Clarke S., '08, Kalispell, Mont.
 Smith, Ernest V., '07, Adams
 Smith, Frank Dale, '05, Stratford, S. D.
 Smith, Fred L., '06, Chatfield
 B.A., '03, University of Minnesota
 Smith, Hiram W., '97, Crookston
 Smith, Leon G., '10, Buffalo
 Smith, Martha J. (Mrs. R. E. Cutts), '91,
 Yankton, S. D.
 Smith, Margaret Isabel, '06, Freeport, Ill.
 Smith, Oscar Mendelson, '09, Tacoma,
 Wash.
 B.A., '05, University of Minnesota
 *Smith, William S., '92, Waseca
 Soderlind, Andrew, '90, Minneapolis
 Sogge, Louis, '05, Jackson
 Soper, John E., '96, Norwood
 *Sorenson, Anthony N., '99, Minneapolis
 *Sorg, John A., '96, Hastings
 Sorkness, P. R., '95, Fargo, N. D.
 Souba, Frederick J., '10, Hopkins
 B.S., '08, University of Minnesota
 South, J. R., '89, Ouray, Colo.
 Spear, Albert E., '11, Belfield, N. Dak.
 Ph.B., '05, Hamline University
 Speier, Hugo, '84, Minneapolis
 Spottswood, Edward W., '93, Missoula, Mont.

*Deceased.

- Stack, George F., '96, Independence, Wis.
 B.A., '93, University of Minnesota
- Stahl, Harriet S., '97, Harmony
- Staley, John C., '03, St. Paul
- *Stebbins, Albert M., '94, Glenwood
- Stebbins, Eugene B., '08, Hurley, Wis.
- *Steel, Edwin D., '89, Mankato
- Stemsrud, Arne A., '01, Dawson
- Stephan, Ernest L., '93, Hinckley
- Stephenson, John L., '95, Monango, N. D.
- Sterner, Otto, '03, Cambridge
- Stevens, Charles S., '07, Farmington
 B.A., '04, University of Minnesota
- Stevens, John Jr., '97, Belfast, Me.
- Stewart, Allen B., '91, Owatonna
- Stewart, Elsie G., '09, Cheney, Wash.
- Stewart, Malcolm A., '02, Omamee, N. D.
- Stierle, Adolph, '01, St. Paul
 Ph.G., New York
- Stimpson, Edward W., '03, Roslyn, Wash.
- Stockman, Bert G., '96, Woodville, Wis.
- Stolpestad, Harold L., '01, St. Paul
- Stowell, Joab, Jr., '90, North Amherst, Mass.
- Strachauer, Arthur C., '08, Minneapolis
- Strang, David M., '09, Northfield
- Strathern, Fred P., '97, St. Peter
 B.S., '94, University of Minnesota
- Strathern, Moses Lane, '07, Coleraine
 B.A., '04, University of Minnesota
- Stricklebergers, Mrs. R. W., (Lindstrom),
 '03, Oberon, N. D.
- Strout, George E., '01, Winthrop
- Stuhr, Henry C., '00, Argyle
- Sundt, Mathias, '09, Hanska
 B.A., '06, University of Minnesota
- Sutton, Charles S., '09, Minneapolis
- B.A., '06, University of Minnesota
- Swanson, Cephas, '07, St. Hilaire
 B.A., Gustavus Adolphus College
- *Swartz, West J., '00, Forest Lake
- Sweitzer, Samuel E., '01, Minneapolis
- Swenson, George B., '00, Baldwin, Wis.
- Taylor, Wm. W., '00, Kalispell, Mont.
- Tebbutt, R. L., '04, Laramie, Wyo.
- Teisberg, Carl B., '06, Pine City
- Tennant, Russell W., '99, Spokane, Wash.
- Tenney, Jacob S., '95, Alma, Wis.
- Tennyson, Falk, '93, Minneapolis
- Thabes, John A., '96, Brainerd
- Thelen, Wm. P., '02, Wilton, N. D.
- Thomas, George E., '04, Minneapolis
 B.L., '01, University of Minnesota
- Thompson, Albert, '05, St. James
- Thomson, Arthur M., '04, South Park, Wash.
- Thordalsen, Torfin, '02, Cottonwood
- Thorpe, Arthur C., '97, Los Angeles, Cal.
- Thrane, Marcus, '94, Madison
- Thyng, Date K., '96, Willow City, N. D.
- Tilderquist, David L., '03, Duluth
- Tirrell, John M., '00, Portal, N. D.
 B.A., '97, University of Minnesota
- Titus, William S., '04, Mora
- Todd, Frank C., '92, Minneapolis
 D.D.S., '91, University of Minnesota
- Todd, Gilbert D., '03, Medina, N. D.
- Towers, Mary E., (Mrs. F. E. Towers), '98,
 Minneapolis
- Tripp, George A., '99, South Bend, Wash.
- Trowbridge, E. H., '09, St. Joseph, Mo.
- True, Augusta Isabella, (Mrs. E. R. Grant)
 '94, El Reno, Okla.
- Truscott, Joseph R., '01, Binford, N. D.
- Trutna, Thomas J., '05, Silver Lake
- Tuohy, Edward L., '05, Duluth
 B.A., '02, University of Minnesota
- Tupper, Eugene L., '97, Ottawa, Ohio
- Turnacliff, Dale D., '11, Osakis
- *Turner, Arthur L., '94, Faribault
- Turner, Mrs. Frances E., (Mrs. C. L. Rose)
 '95, Spokane, Wash.
- Tyler, Frank A., '06, Molson, Wash.
- Tyrrrell, Clinton C., '06, Minneapolis
- Valentine, Walter H., '00, Tracy
- Vallely, Rose V., '01, Minneapolis
- Van Damme, Wm. C., '86, Minneapolis
- Van Slyke, Charles A., '91, St. Paul
- Van Valkenburg, B. F., '93, Long Prairie
- Varco, Albert R., '07, Miles City, Mont.
 B.A., '04, University of Minnesota
- Verne, Victor E., '06, Parkers Prairie
- Vigen, Jorgen G., '94, Fergus Falls
- Vinje, Syver, '02, Henning
- Vistaunet, Peder S., '06, Shelly
- Vistaunet, Peter L., '02, Thief River Falls
- Voges, Adolph, '04, Hanover
- Wagar, Wm. D., '98, Michigan City,
 N. D.
- Walker, George H., '08, Fairfax
 B.S., University of Nebraska
- Walker, James D., '09, Wykoff
 B.A., University of North Dakota
- Walker, John Frank, '08, Bison, S. D.
- Wallace, Charles J., '04, Chippewa Falls,
 Wis.
- Walter, Guy F., '06, Minneapolis
- *Walters, Eugene, '95, Bakewell, Eng.
- Wangelin, Hugo E., '91, Belleville, Ill.
- Wanous, Ernest Z., '97, Minneapolis
- Ward, Austin, '00, Boulder, Mont.
- Warner, Eugene F., '04, Duluth
 H. '02, University of Minnesota
- Warren, Frank S., '96, Faribault
- Watkins, Frank A., '89, Wilkesbarre, Pa.
- Watson, Earl M., '10, Crawfordsville, Ind.
 B.A., '03, Wabash College
- Watson, Thomas R., '95, Clarissa
- Watson, Tolbert, '08, Albany
 B.A., Macalester

- Webster, Albert M., '04, Portland, Ore.
B.A., '91, University of Minnesota
- Weishaar, Charles, '05, Britton, S. D.
- Welles, H. Journeay, '01, Minneapolis
- Wells, Horace R., '98, North Yakima, Wash.
- Westeen, Anders A., '92, Grand Forks, N. D.
- Wethall, Anton G., '03, Minneapolis
- Weyrens, Joseph P., '07, Taylor, N. D.
B.S., '05, University of Minnesota
- Weyrens, Peter J., '00, Red Wing
- *Wheeler, Frederick L., '04, Minneapolis
B.S., '01, University of Minnesota
- Wheeler, Merritt W., '10, Iowa City, Ia.
B.A., M.S., University of Iowa
- Wheelon, Frank E., '00, Minot, N. D.
- Whipple, Clarence D., '03, Minneapolis
- Whitacre, John C., '01, St. Paul
- White, James B., '91, Montgomery
- Wiger, Nicholas N., '03, Seattle, Wash.
- Wiik, Johan C., '07, Minneapolis
- Wilcox, M. Russell, '97, Minneapolis
- Wilcox, Van H., '02, Minneapolis
- Wilkinson, Stella L., '03, Duluth
- Will, Wm. W., '05, Bertha
- Williams, Ulysses G., '89, Minneapolis
- Williams, Archie E., '00, Havre, Mont.
B.A., '94, University of Minnesota
- Williams, Stephen E., '04, Chippewa Falls, Wis.
- Willson, Hugh S., '04, Crystal, N. D.
- Wilson, Louis B., '96, Rochester
- Winberg, Osten K., '92, Lake Park
- Wiseman, Robert L., '97, Pine City
- Witham, Carl A., '06, Minneapolis
- Wolner, Oscar H., '02, St. Cloud
Phm.D., '98, University of Minnesota
- Woods, Ernest A., '99, Clear Lake
- Wright, Charles O., '90, Luverne
- Wright, Franklin R., '94, Minneapolis
D.D.S., '90, University of Minnesota
- Wunder, Henry E., '92, Proctor Knott
- Wylie, Arthur R. T., '06, Grafton, N. D.
- Wyman, Kate, '10, Portland, Ore. (Mrs. Frank Grant)
B.A., '00, Carleton College
- Yoerg, Otto W., '10, Winthrop
- Yoseph, Yoseph D., '94, Minneapolis
- Youngs, Alfred H., '07, Pierre, S. D.
- Zander, Chas. H., '09, St. Paul
Ph.C., '02, University of Minnesota
- Ziskin, Thomas, '11, Minneapolis

*Deceased.

C
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1913-14.

The University of Minnesota

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OF THE
UNIVERSITY OF ILLINOIS

THE MEDICAL SCHOOL

1913-1914



BULLETIN OF THE UNIVERSITY OF MINNESOTA
VOL. XVI, NO. 16. JULY 1913

Entered at the Post Office
in Minneapolis as second-class matter
MINNEAPOLIS, MINN.

The Bulletin of the University of Minnesota is issued by the University of Minnesota as often as twice a month during the university year.

The Bulletin comprises—

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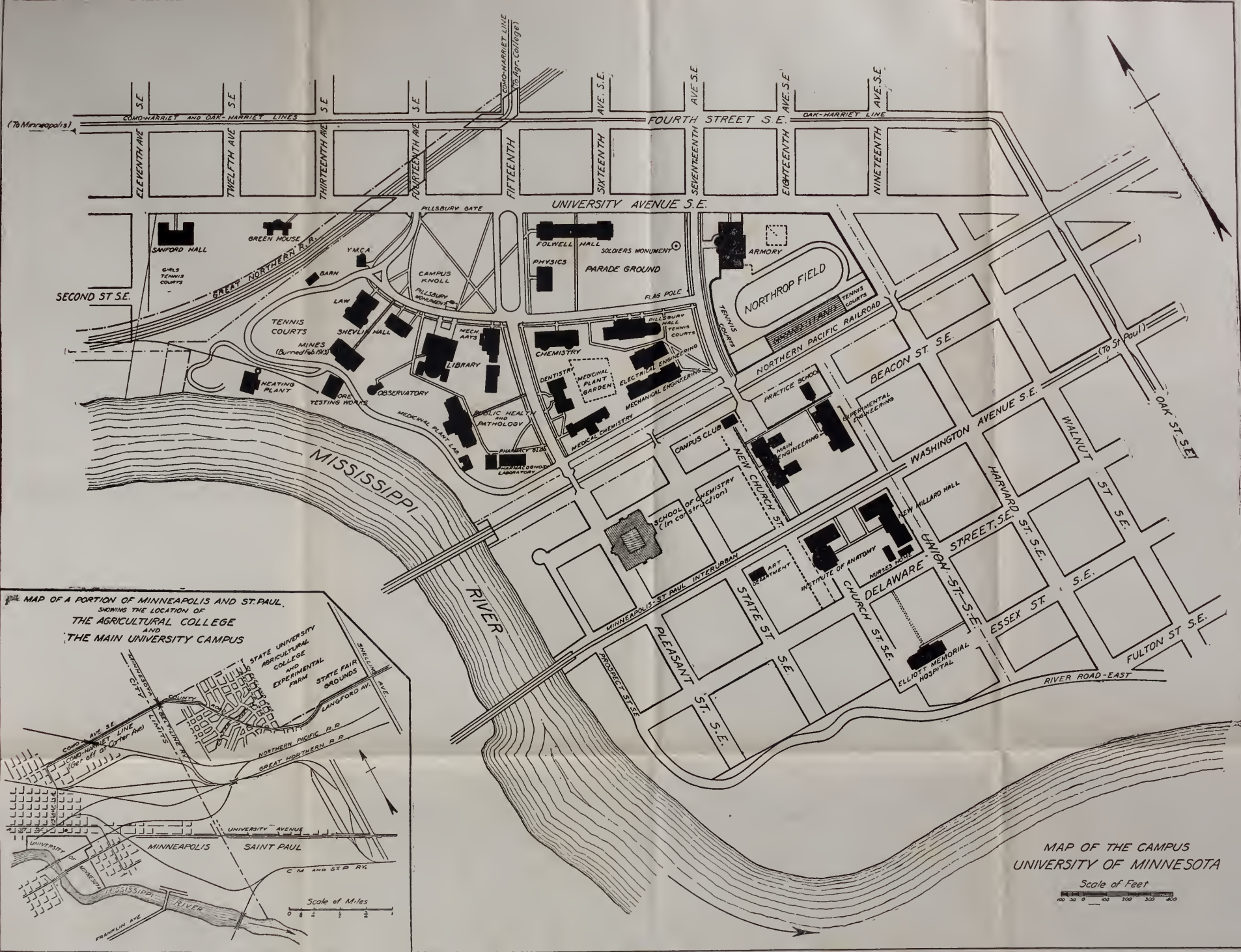
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The University of Minnesota

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1913							1914													
JULY							JANUARY							JULY						
Su	Mo	Tu	W	Th	Fr	Sa	Su	Mo	Tu	W	Th	Fr	Sa	Su	Mo	Tu	W	Th	Fr	Sa
..	..	1	2	3	4	5	..	..	..	..	1	2	3	..	..	..	1	2	3	4
6	7	8	9	10	11	12	4	5	6	7	8	9	10	5	6	7	8	9	10	11
13	14	15	16	17	18	19	11	12	13	14	15	16	17	12	13	14	15	16	17	18
20	21	22	23	24	25	26	18	19	20	21	22	23	24	19	20	21	22	23	24	25
27	28	29	30	31	..	..	25	26	27	28	29	30	31	26	27	28	29	30	31	..
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AUGUST							FEBRUARY							AUGUST						
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3	4	5	6	7	8	9	8	9	10	11	12	13	14	2	3	4	5	6	7	8
10	11	12	13	14	15	16	15	16	17	18	19	20	21	9	10	11	12	13	14	15
17	18	19	20	21	22	23	22	23	24	25	26	27	28	16	17	18	19	20	21	22
24	25	26	27	28	29	30	..	..	..	..	..	..	..	23	24	25	26	27	28	29
31	..	..	..	..	..	..	..	..	..	..	..	..	..	30	31	..	..	..	..	..
SEPTEMBER							MARCH							SEPTEMBER						
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7	8	9	10	11	12	13	8	9	10	11	12	13	14	6	7	8	9	10	11	12
14	15	16	17	18	19	20	15	16	17	18	19	20	21	13	14	15	16	17	18	19
21	22	23	24	25	26	27	22	23	24	25	26	27	28	20	21	22	23	24	25	26
28	29	30	..	..	..	..	29	30	31	..	..	..	..	27	28	29	30	..	..	..
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OCTOBER							APRIL							OCTOBER						
..	..	..	1	2	3	4	..	..	..	1	2	3	4	..	..	..	1	2	3	4
5	6	7	8	9	10	11	5	6	7	8	9	10	11	..	4	5	6	7	8	9
12	13	14	15	16	17	18	12	13	14	15	16	17	18	11	12	13	14	15	16	17
19	20	21	22	23	24	25	19	20	21	22	23	24	25	18	19	20	21	22	23	24
26	27	28	29	30	31	..	26	27	28	29	30	..	..	25	26	27	28	29	30	31
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NOVEMBER							MAY							NOVEMBER						
..	..	..	..	..	..	1	..	..	..	..	..	1	2	1	2	3	4	5	6	7
2	3	4	5	6	7	8	3	4	5	6	7	8	9	8	9	10	11	12	13	14
9	10	11	12	13	14	15	10	11	12	13	14	15	16	15	16	17	18	19	20	21
16	17	18	19	20	21	22	17	18	19	20	21	22	23	22	23	24	25	26	27	28
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30	..	..	..	..	..	..	31	..	..	..	..	..	..	..	..	..	..	..	..	..
DECEMBER							JUNE							DECEMBER						
..	1	2	3	4	5	6	..	..	1	2	3	4	5	..	..	1	2	3	4	5
7	8	9	10	11	12	13	7	8	9	10	11	12	13	6	7	8	9	10	11	12
14	15	16	17	18	19	20	14	15	16	17	18	19	20	13	14	15	16	17	18	19
21	22	23	24	25	26	27	21	22	23	24	25	26	27	20	21	22	23	24	25	26
28	29	30	31	..	..	..	28	29	30	..	..	..	..	27	28	29	30	31	..	..

UNIVERSITY CALENDAR

1913-1914

The University year covers a period of thirty-eight weeks, beginning on the second Tuesday in September. Commencement Day is always the second Thursday in June.

1913

September	2	Tuesday	Registration closes except for new students
September	2-9	Week	Fees payable except for new students
September	8-15	Week	Examinations for the removal of conditions, entrance examinations, registration of new students, and payment of fees
September	10-16	Week	Military encampment of cadets
September	17	Wednesday	First semester begins
November	26	Wednesday	Thanksgiving recess begins 9:00 p.m.
December	1	Monday	Thanksgiving recess ends 8:00 a.m.
December	19	Friday	Christmas vacation begins 9:00 p.m.

1914

January	6	Tuesday	Christmas vacation ends 8:00 a.m.
January	20	Tuesday	Registration for second semester closes
January	26	Monday	Final examinations begin
January	27	Tuesday	Payment of fees for second semester closes
February	4	Wednesday	Second semester begins
February	12	Thursday	Lincoln's Birthday: a holiday
February	13	Friday	First semester class reports due
April	8	Wednesday	Easter recess begins 9:00 p.m.
April	16	Thursday	Easter recess ends 8:00 a.m.
May	30	Saturday	Decoration Day: a holiday
June	1	Monday	Final examinations begin
June	6	Saturday	Second semester closes
June	7	Sunday	Baccalaureate service
June	8	Monday	Senior class day exercises
June	10	Wednesday	Alumni Day
June	11	Thursday	Forty-second Annual Commencement
June	12	Friday	Summer vacation begins

The University year for 1914-15 will begin Tuesday, September 8.

*Schedule of Examinations for Advanced Standing and
to Remove Conditions*

Tuesday to Saturday, September 9-13, 1913.

9:00 a. m.

2:00 p. m.

THIRD (FRESHMAN) YEAR COURSES

Tuesday	Anatomy (written)	Anatomy (practical)
Thursday	Anatomy (written)	Anatomy (practical)
Friday	General Bacteriology	
Saturday	Physiology	Chemistry, organic; toxicology, water and food analysis

FOURTH (SOPHOMORE) YEAR COURSES

Tuesday	General Pathology	Physiology
Wednesday	Special Pathology & Bacteriology (practical)	Special Pathology & Bacteriology (written)
Thursday	Anatomy	Pharmacology
Friday	General Bacteriology	Anatomy
Saturday	Medical Case Taking Physical Diagnosis	Anatomy

FIFTH (JUNIOR) YEAR COURSES

Tuesday	Obstetrics Gynecology	Practice of Medicine Pediatrics
Wednesday	Principles of Surgery	Surgical Anatomy
Thursday	Surgery	Pharmacology
Friday	Mental and Nervous Operative Surgery	Surgical Pathology Pathology of Nervous System
Saturday	Pathology of Tumors	Clinical Pathology

SIXTH (SENIOR) YEAR COURSES

Tuesday	Obstetrics & Gynecology	Practice of Medicine
Wednesday	Surgery	Hygiene
Thursday	Eye and Ear	Nose and Throat
Friday	Mental and Nervous	Therapeutic Conference

Examinations for advanced standing and to remove conditions in all elective subjects, and all subjects not listed above, will be held by appointment during September 9 to 13. In all subjects not specifically scheduled, condition examinations must be arranged for not later than September 9.

Students must register for examinations in Dean's office at least twenty-four hours prior to any examination they may wish to take. See also pages 9 and 10 for regulation concerning unremoved conditions, etc.

THE UNIVERSITY

THE COLLEGE OF SCIENCE, LITERATURE, AND THE ARTS

THE COLLEGE OF ENGINEERING AND THE MECHANIC ARTS

THE DEPARTMENT OF AGRICULTURE, including—

THE COLLEGE OF AGRICULTURE

THE COLLEGE OF FORESTRY, including—

FOREST EXPERIMENT STATIONS AT ITASCA AND CLOQUET

THE CENTRAL SCHOOL OF AGRICULTURE, UNIVERSITY FARM,
including—

THE DAIRY SCHOOL

THE SHORT COURSE FOR FARMERS

TEACHERS' SUMMER TRAINING SCHOOL

THE SCHOOL OF TRACTION ENGINEERING

THE NORTHWEST SCHOOL OF AGRICULTURE, CROOKSTON

THE WEST CENTRAL SCHOOL OF AGRICULTURE, MORRIS

THE EXPERIMENT STATIONS, including—

THE MAIN STATION, ST. ANTHONY PARK

THE NORTHWEST EXPERIMENT STATION, CROOKSTON

THE NORTH CENTRAL EXPERIMENT STATION, GRAND
RAPIDS

THE WEST CENTRAL EXPERIMENT STATION, MORRIS

THE NORTHEAST DEMONSTRATION FARM AND EXPERI-
MENT STATION, DULUTH

THE SOUTHEAST DEMONSTRATION FARM AND EXPERI-
MENT STATION, WASECA

THE FRUIT BREEDING FARM, ZUMBRA HEIGHTS

AGRICULTURAL EXTENSION

THE LAW SCHOOL

THE MEDICAL SCHOOL, including—

THE SCHOOL FOR NURSES

THE COLLEGE OF DENTISTRY

THE COLLEGE OF PHARMACY

THE SCHOOL OF MINES, including—

MINNESOTA SCHOOL OF MINES EXPERIMENT STATION

THE SCHOOL OF ANALYTICAL AND APPLIED CHEMISTRY

THE COLLEGE OF EDUCATION

THE GRADUATE SCHOOL

UNIVERSITY EXTENSION

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The Governor of the State						
The Hon. C. G. SCHULZ, St. Paul	-	-	-	-	-	<i>Ex-Officio</i>
The State Superintendent of Public Instruction						
The Hon. JOHN G. WILLIAMS, Duluth	-	-	-	-	-	1914
The Hon. A. E. RICE, Willmar	-	-	-	-	-	1915
The Hon. CHARLES L. SOMMERS, St. Paul	-	-	-	-	-	1915
The Hon. B. F. NELSON, Minneapolis	-	-	-	-	-	1916
The Hon. PIERCE BUTLER, St. Paul	-	-	-	-	-	1916
The Hon. FRED B. SNYDER, Minneapolis	-	-	-	-	-	1916
The Hon. W. J. MAYO, Rochester	-	-	-	-	-	1919
The Hon. MILTON M. WILLIAMS, Little Falls	-	-	-	-	-	1919

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 WILLIAM R. VANCE, Ph.D., LL.B., Dean of the Law School
 ELIAS POTTER LYON, Ph.D., M.D., Dean of the Medical School
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 FREDERICK J. WULLING, Ph.D., LL.M., Dean of the College of Pharmacy
 WILLIAM R. APPLEBY, M.A., Dean of the School of Mines
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 MARGARET SWEENEY, Ph.D., Dean of Women

MEDICINE AND ALLIED DEPARTMENTS

The Department of Medicine includes the following colleges:

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RICHARD OLDING BEARD, M.D., Secretary

The College of Dentistry

ALFRED OWRE, B.A., M.D., C.M., D.M.D., Dean

The College of Pharmacy

FREDERICK J. WULLING, Phm.D., LL.M., Dean

Each college is self-governed as to its internal affairs, having its own faculty and an independent curriculum. The laboratories and staff of the Medical School provide instruction for all students in each of the three colleges, as required, in the following branches:

Gross and microscopic anatomy, physiology and physiologic chemistry, pathology, bacteriology and pharmacology.

Medical education in the State of Minnesota is unified at the State University.

During the summer of 1912, two new buildings, known as the Institute of Anatomy and the New Millard Hall, were completed for the use of certain departments of the Medical School.

THE MEDICAL SCHOOL

THE ADMINISTRATIVE BOARD

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CLARENCE MARTIN JACKSON, M.S., M.D., Director of the Department of Anatomy

JENNINGS C. LITZENBERG, B.S., M.D., Chief of the Department of Obstetrics

HAROLD E. ROBERTSON, B.A., M.D., Acting Director of the Departments of Pathology and of Public Health and Bacteriology.

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CYRUS NORTHROP, LL.D., President Emeritus 519 10th Ave. S. E.

AMOS W. ABBOTT, M.D., Emeritus Professor of Gynecology
1717 1st Ave. S.

EVERTON J. ABBOTT, B.A., M.D., Emeritus Professor of Clinical Medicine
425 Dayton Ave., St. Paul

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5127 Lake Harriet Blvd.

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C. EUGENE RIGGS, M.A., M.D., Emeritus Professor of Mental and Nervous Diseases
10 Crocus Hill, St. Paul

THOMAS S. ROBERTS, M.D., Emeritus Professor of Pediatrics
1603 4th Ave. S.

JAMES T. CHRISTISON, M.D., Emeritus Professor of Pediatrics
535 Lowry Bldg., St. Paul

F. L. ADAIR, B.S., M.D., Assistant Professor of Obstetrics
820 Donaldson Bldg.

LOUIS B. BALDWIN, M.D., Superintendent of University Hospitals
304 State St. S. E.

- RICHARD OLDING BEARD, M.D., Secretary of the Medical School, and
Associate Professor of Physiology The Virginia
E. T. BELL, B.S., M.D., Assistant Professor of Pathology
215 Walnut St. S. E.
- EDGAR D. BROWN, Phm.D., M.D., Associate Professor of Pharmacology
3525 3d Ave. S.
- FRANK E. BURCH, M.D., Assistant Professor of Diseases of the Eye,
Ear, Nose, and Throat 930 Lowry Bldg., St. Paul
- ABRAHAM B. CATES, M.A., M.D., Associate Professor of Obstetrics
413 Pillsbury Bldg.
- J. FRANK CORBETT, M.D., Associate Professor of Experimental Surgery
2446 Park Ave.
- WARREN A. DENNIS, B.L., M.D., Assistant Professor of Surgery
942 Lowry Bldg., St. Paul
- CHARLES A. ERDMANN, M.D., Associate Professor of Applied Anatomy
612 9th Ave. S. E.
- JAMES S. GILFILLAN, M.D., Assistant Professor of Medicine
910 Lowry Bldg., St. Paul
- ARTHUR J. GILLETTE, M.D., Professor of Orthopedia, in charge of
Division Seven Corners, St. Paul
- CHARLES LYMAN GREENE, M.D., Professor of Medicine and Chief of the
Department 324 Summit Ave., St. Paul
- A. S. HAMILTON, B.S., M.D., Associate Professor of Nervous and Mental
Diseases, in charge of Division 513 Pillsbury Bldg.
- GEORGE D. HEAD, B.S., M.D., Associate Professor of Medicine
503 Donaldson Bldg.
- CLARENCE MARTIN JACKSON, M.S., M.D., Professor of Anatomy and
Director of the Department 428 Walnut St. S. E.
- JOHN B. JOHNSTON, Ph.D., Professor of Comparative Neurology
715 Fulton St. S. E.
- WINFORD P. LARSON, M.D., Assistant Professor of Bacteriology
614 9th Ave. S. E.
- ARTHUR A. LAW, M.D., Associate Professor of Surgery
420 Syndicate Bldg.
- FREDERICK E. LEAVITT, M.D., Assistant Professor of Obstetrics
910 Lowry Bldg., St. Paul
- THOMAS G. LEE, B.S., M.D., Professor of Comparative Anatomy
509 E. River Road
- JENNINGS C. LITZENBERG, B.S., M.D., Professor of Obstetrics and Chief
of the Department 910 Donaldson Bldg.
- ARCHIBALD MACLAREN, B.S., M.D., Associate Professor of Surgery
914 Lowry Bldg., St. Paul
- JOHN S. MACNIE, B.A., M.D., Assistant Professor of Diseases of the Eye,
Ear, Nose, and Throat 506 Donaldson Bldg.
- ARTHUR T. MANN, B.S., M.D., Assistant Professor of Surgery
910 Donaldson Bldg.
- JAMES E. MOORE, M.D., Professor of Surgery and Chief of the Depart-
ment 616 Syndicate Bldg.

- ROBERT H. MULLIN, B.A., M.B., Associate Professor of Public Health
1023 University Ave. S. E.
- WILLIAM R. MURRAY, Ph.B., M.D., Associate Professor of Diseases of
the Eye, Ear, Nose, and Throat 621 Syndicate Bldg.
- LOUISE M. POWELL, R.N., Superintendent of the School for Nurses
417 Delaware St. S. E.
- WALTER R. RAMSEY, M.D., Assistant Professor of Pediatrics
214 S. Grotto St., St. Paul
- HARRY P. RITCHIE, Ph.B., M.D., Assistant Professor of Surgery
914 Lowry Bldg., St. Paul
- HAROLD E. ROBERTSON, B.A., M.D., Associate Professor of Pathology
and Acting Director of Departments of Pathology and of Public
Health and Bacteriology 507 Essex St. S. E.
- JOHN T. ROGERS, M.D., Assistant Professor of Surgery
342 Lowry Bldg., St. Paul
- JOHN L. ROTHROCK, M.A., M.D., Assistant Professor of Gynecology
514 Lowry Bldg., St. Paul
- RICHARD E. SCAMMON, Ph.D., Assistant Professor of Anatomy
200 Harvard St. S. E.
- FREDERICK H. SCOTT, Ph.D., M.B., D.Sc., Associate Professor of Phys-
iology 1307 6th St. S. E.
- JULIUS PARKER SEDGWICK, B.S., M.D., Associate Professor of Pediatrics,
in charge of Division 614 Syndicate Bldg.
- WALTER D. SHELDEN, B.S., M.D., Assistant Professor of Medicine
3233 Irving Ave. S.
- J. CLARK STEWART, B.S., M.D., Associate Professor of Surgery
616 Syndicate Bldg.
- SAMUEL E. SWEITZER, M.D., Assistant Professor of Dermatology
625 Syndicate Bldg.
- FRANK C. TODD, M.D., Professor of Diseases of the Eye, Ear, Nose, and
Throat, in charge of Division 506 Donaldson Bldg.
- S. MARX WHITE, B.S., M.D., Associate Professor of Medicine
910 Donaldson Bldg.
- M. RUSSELL WILCOX, M.D., Assistant Professor of Physiology
802 Donaldson Bldg.
- FRANKLIN R. WRIGHT, M.D., Assistant Professor of Genito-urinary
Diseases 707 Donaldson Bldg.

- WILLIAM F. ALLEN, M.A., Instructor in Histology and Embryology
3352 Prospect Terrace
- MOSES BARRON, B.S., M.D., Instructor in Pathology
763 Holly Ave., St. Paul
- EDWIN A. BAUMGARTNER, B.A., M.A., Instructor in Histology and
Embryology 1700 4th St. S. E.
- FRANK S. BISSELL, M.D., Roentgenologist and Instructor in Roent-
genology 4412 Lake Harriet Blvd.
- JOHN BUTLER, M.D., Instructor in Dermatology 403 Pillsbury Bldg.

- CHARLES D. FREEMAN, M.D., Instructor in Dermatology and Genito-urinary Diseases 642 Lowry Bldg., St. Paul
- EMIL S. GEIST, M.D., Instructor in Orthopedic Surgery 614 Syndicate Bldg.
- ALEXANDER R. HALL, M.D., Instructor in Medicine 535 Lowry Bldg., St. Paul
- EARLE R. HARE, B.A., M.D., Instructor in Surgery 622 Syndicate Bldg.
- EDGAR J. HUENEKENS, B.A., M.D., Instructor in Medicine 1037 Andrus Bldg.
- JOHN E. HYNES, M.D., Instructor in Medicine 3349 University Ave. S. E.
- HARRY G. IRVINE, M.D., Instructor in Dermatology 601 Syndicate Bldg.
- WILLIAM C. JOHNSON, B.A., M.D., Instructor in Pathology 313 8th Ave. S. E.
- FRANCIS B. KINGSBURY, Ph.D., Instructor in Physiology and Physiologic Chemistry
- OSCAR OWRE, M.D., C.M., Instructor in Genito-urinary Diseases 707 Masonic Temple
- ELMER H. PARKER, B.S., M.D., Instructor in Diseases of the Eye, Ear, Nose, and Throat 2401 Sheridan Ave. S.
- C. J. V. PETTIBONE, Ph.D., Instructor in Physiology and Physiologic Chemistry 110 Church St. S. E.
- FREDERICK H. POPPE, B.A., M.D., Instructor in Surgery 820 Donaldson Bldg.
- ERNEST T. F. RICHARDS, M.D., C.M., Instructor in Medicine 914 Lowry Bldg., St. Paul
- FREDERIC W. SCHLUTZ, B.A., M.D., Instructor in Pediatrics 802 Donaldson Bldg.
- ARTHUR C. STRACHAUER, M.D., Instructor in Surgery 616 Syndicate Bldg.
- IVER SIVERTSEN, M.D., Instructor in Gynecology 1028 Andrus Bldg.
- HENRY L. ULRICH, B.S., M.D., Instructor in Medicine 420 Syndicate Bldg.

TEACHING ASSISTANTS

- JOHN S. ABBOTT, B.A., M.D., Assistant in Surgery 541 Lowry Bldg., St. Paul
- S. J. ASPELUND, B.A., M.D., Assistant in Gynecology 315 Masonic Temple
- ERNEST L. BAKER, M.D., Assistant in Medicine 503 Donaldson Bldg.
- CLIFTON A. BOREEN, B.S., M.D., Assistant in Dermatology 416 Syndicate Bldg.
- PAUL F. BROWN, B.A., M.D., Assistant in Surgery 3733 Nicollet Ave.
- HARRY E. CANFIELD, M.D., Assistant in Diseases of the Eye, Ear, Nose, and Throat 506 Donaldson Bldg.
- CARL C. CHATTERTON, M.D., Assistant in Orthopedics Seven Corners, St. Paul

- BRONSON CROTHERS, B.A., M.D., Assistant in Pediatrics
942 Lowry Bldg., St. Paul
- ERNEST M. HAMMES, M.D., Assistant in Nervous and Mental Diseases
583 Endicott Bldg., St. Paul
- JAMES F. HAMMOND, M.D., C.M., Assistant in Pediatrics
334 Lowry Bldg., St. Paul
- ALBERT E. JOHANN, B.A., M.D., Assistant in Pediatrics
204 Donaldson Bldg.
- STANLEY E. KERRICK, M.D., Assistant in Diseases of the Eye, Ear, Nose,
and Throat 802 Donaldson Bldg.
- W. J. KREMER, M.D., Assistant in Genito-urinary Diseases
253 Plymouth Ave. N.
- JOHN M. LAJOIE, M.B., Assistant in Medicine 910 Donaldson Bldg.
- RAE T. LAVAKE, B.A., M.D., Assistant in Orthopedics
203 Donaldson Bldg.
- EDWARD MOREN, M.D., Assistant in Surgery 307 Donaldson Bldg.
- ANGUS W. MORRISON, B.A., M.D., Assistant in Nervous and Mental
Diseases 513 Pillsbury Bldg.
- HORACE NEWHART, M.D., Assistant in Diseases of the Eye, Ear, Nose,
and Throat 910 Donaldson Bldg.
- FRED J. PRATT, M.D., Assistant in Diseases of the Eye, Ear, Nose, and
Throat 328 Central Ave.
- CHARLES A. REED, B.S., M.D., Assistant in Orthopedics
420 Syndicate Bldg.
- FREDERICK C. RODDA, M.D., Assistant in Pediatrics 134 E. 18th St.
- CHARLES L. RODGERS, M.D., Assistant in Obstetrics 59 Lyndale Ave. N.
- HENRY C. STUHR, M.D., Assistant in Surgery 628 Syndicate Bldg.
- ANTON G. WETHALL, B.S., M.D., Assistant in Genito-urinary Diseases
325 Cedar Ave.
- HARVEY B. ZIMMERMANN, M.D., Assistant in Surgery
242 Lowry Bldg., St. Paul

Members of the faculties of other schools giving instruction to
medical students:

- GEORGE B. FRANKFORTER, M.A., Ph.D., Dean of the School of Chemistry
- FREDERICK J. WULLING, Phm.D., LL.M., Dean of the College of Phar-
macy
- IRA HARRIS DERBY, Ph.D., Assistant Professor of Chemistry
- EVERHART P. HARDING, M.S., Ph.D., Assistant Professor of Chemistry
- WILLIAM H. HUNTER, Ph.D., Instructor in Chemistry

GENERAL INFORMATION

The University reserves the right to alter, at any time, any statements or rules in this or any other bulletin, or in any other printed announcement of University courses or requirements. Students must be governed by such changes.

REQUIREMENTS FOR ADMISSION

Students entering the Medical School must have received the bachelor's degree in arts or science or must register in one of the combined courses described below so as to secure the bachelor's degree before graduating in Medicine.

All students are required to present to the University Registrar evidence of at least two years' work in a recognized college of science and arts, which must include the following subjects:

Rhetoric.....	6 credits
Physics.....	8 credits
General Inorganic Chemistry.....	6 credits
Qualitative Analysis.....	6 credits
Biology (preferably Zoology).....	6 credits
Language, two years of High School Latin and a reading knowledge of either German or French.	

One *credit* means one recitation hour per week for one semester. A single credit hour in a laboratory subject requires two or more hours of consecutive work.

The following courses given in the College of Science, Literature, and the Arts of the University of Minnesota, or their equivalent in other approved colleges, will cover the above credits.

Rhetoric, Course 1.

Physics, Courses 1, 2, 3, and 4.

Chemistry, Courses 1 or 2, and 3.

Animal Biology, Course 1; or Botany, Course 1.

German or French, a reading knowledge. To secure a reading knowledge will ordinarily require one or two years of college work, dependent on the previous high school training. Tests for such knowledge will be given by members of the staff of the Medical School. Students must present themselves for the tests before entering the School and must pass in them satisfactorily before the end of the fourth year.

Electives, to make up 60 credits (62 credits until September, 1914), in the College of Science, Literature, and the Arts will be added to the compulsory studies cited above. At least one course must be elected from the social science group of electives (Group II) in that College.

Candidates who present two or more years of collegiate work, but lack any of the subjects named, will be required to pass examinations therein conducted by the College of Science, Literature, and the Arts.

The University Summer Session offers opportunities for making up deficiencies in preparation.

MATRICULATION AND REGISTRATION

Students who are entering the Medical School for the first time will go first to the University Registrar, in the Library Building, and present their entrance qualifications.

The registration of all students consists of three parts and should be carried out in the following order:

1. Present registration slip to the Registrar and secure a statement of fees.
2. Present this statement at once to the Cashier, in the Library Building, and pay fees.
3. Report promptly to the Dean of the Medical School, in Millard Hall, for final classification and registration. Students must follow this order and complete registration as promptly as possible in order to secure tickets for entrance to the various courses.

Students having matriculated in previous years are required to indicate the fact by registration on proper blank not later than September 2, 1913. Fees must be paid in full on or before September 9, 1913.

For the second semester, registration must be effected on or before January 20, 1914, and fees must be paid on or before January 27, 1914.

A penalty fee of one dollar will be charged all students who do not register or pay fees within the time specified, and, after one week, a fee of twenty-five cents per day for each day's delay will be added. The Registrar will send proper blanks to all students who were in school the previous year, on or before August 20. Students who fail to receive blanks at that date should call for them.

Registration is not complete until all conditions are removed.

TUITION AND FEES

The annual tuition fee in the Medical School is \$150. No tuition fee is charged for the fifth year of work recently added to the course.

The attention of students in need of financial assistance is called to the Gilfillan trust, details of which are given on page 12 of this bulletin.

One-half of the annual fee is payable at the time of registration at the beginning of each semester. If the applicant fails to pass the entrance examination, his fees will be returned by the Cashier. Absence or failure to continue study will not entitle the student to return of fees, except in cases of special hardship, when application may be made to the President of the University.

A student who takes advanced standing will not receive any credit therefor upon his annual fees.

A hospital fee of three dollars will be paid by junior and senior students.

A fee of one dollar is charged for examination to remove a condition.

Special examinations may be ordered by the Administrative Board under exceptional circumstances, for which a fee of five dollars for each subject must be paid to the University Cashier.

A student repeating work by reason of failure must pay the usual fee connected with that course.

Special undergraduate students will pay to the Cashier fees for the studies they elect to pursue proportional to the total fees of the year in which such studies are placed.

Graduate students will pay an admission fee of ten dollars which will entitle them to attend any lectures they may desire in regular courses.

Every student in this school is assigned at the time of registration a University post-office box, for which a rental charge of fifty cents per year is made. Students are held responsible for the receipt of official notices sent through the University post-office.

Lockers in Millard Hall will be assigned to students in pairs upon application at the Secretary's office. Usual locker fees will be charged.

A deposit of ten dollars for third-year students and of five dollars for fourth-, fifth-, and sixth-year students will be made with the University Cashier each year by every student at the time of enrollment as a caution fee. This fee is intended to cover the cost of unnecessary damage in the college buildings and of breakage and loss of laboratory apparatus and materials, penalties for late registration or late payment of fees, condition examinations, and rental of post-office box and locker. It will be returned to the student at the close of each year, minus the charges above mentioned and the cost of articles assigned to him, which are not returned in good condition, or of damage to college property for which he is individually responsible. If responsibility for such damage can not be individually fixed, a pro rata charge upon all students concerned will be made.

EXAMINATIONS

Final examination in every subject is held at the end of the semester in which the subject is closed. Opportunity is offered to remove conditions only at the opening of the school year in September.

Students must register for examinations in the Dean's office at least twenty-four hours prior to any special or condition examination they may wish to take.

For special examinations see under Fees.

STANDINGS AND ADVANCEMENT

The final standing of any student in a given subject shall be determined as the result of his practical work (laboratory or clinical), recita-

tions, and oral or written examinations. All of these factors will be taken into consideration in determining the final grade.

Students' final standings are determined at the end of each year by a conference of the heads of the college departments.

Students' standings shall be reported to and obtained from the Dean's office only.

Students shall be reported as passed, incomplete, conditioned, or failed.

Students will not be permitted to substitute private work in any branch for the regular school courses.

Students with entrance or other conditions must remove them before the opening of the succeeding school year.

Habitual absence without satisfactory excuse, continued indifference to study, or persistently poor scholarship will subject the student to temporary or indefinite suspension.

CONDITIONS

Conditions can be removed only at the beginning of the school year in September. A condition not removed in regular course becomes a failure and the work must be repeated in class.

A student who, in faculty conference, is found to be deficient in the major portion of his year's work will be required to repeat the year's work in full.

ADVANCED STANDING

Students from other recognized medical colleges applying for admission to the fourth-, fifth-, and sixth-year classes will be required to present official credentials and other satisfactory evidence of time spent in medical studies, to satisfy all admission requirements, and to pass examinations in the branches already taken by the class they seek to enter, but any student may be excused from such examinations if the instruction which he has received is considered satisfactory by the head of the corresponding department in this school.

Students are not given time credit for work done outside a medical school. However, when a student presents satisfactory evidence of good work done elsewhere, he may be given subject credit for such work and be permitted to take optional or advanced work in the branches and for the time in which he has received subject credit. It is of advantage to the students, therefore, to be able to present subject credits.

No condition of advanced standing will entitle the student to take two years of any graded study at the same time.

CLINICAL SERVICE

The attendance of students at all clinics will be required, and periodical examinations upon series of clinics attended will be given.

Senior students shall be assigned by the Dean's office, for stated periods, to act as clinical clerks in the University Hospital.

Clinical clerks shall be under the immediate supervision of the Senior Interne and shall be assigned their respective duties by him.

They shall attend the Hospital between the hours of 2:30 and 3:30 p.m. on Mondays, Tuesdays, Wednesdays, and Fridays, and shall be excused from attendance on lectures in medicine during the period of their assignment; and they shall also attend, on the same days, between the hours of 3:30 and 5:30, except when the schedule calls for their attendance elsewhere.

Their duties shall be, at the direction of the Senior Interne,

(a) To record results of physical examinations as dictated by the attending physicians.

(b) To make and record examinations in the laboratory.

(c) To make rounds with the attending physicians.

No examinations of patients are to be made except at the express direction of the attending physicians.

Senior students are assigned to the surgical wards of the University Hospital on Mondays, Tuesdays, Wednesdays, and Fridays, between the hours of 10 and 11 a.m. for bedside clinics. Under the direction of the Junior Surgical Staff they are required to examine patients and make the laboratory examinations necessary to arrive at a diagnosis. Without access to the regular hospital records, they are required to write out a complete history of the cases assigned them, including their laboratory findings, diagnosis, and suggestions for treatment. They are then quizzed upon these papers by the Junior Staff, and the papers are filed in the office of the Chief of the Department and make a part of the student's class record.

Senior students will be detailed in turn for service as internes at the University Dispensary for periods of two weeks each. During such service they must be in residence at the Dispensary and must be on call for night service at any hour.

All students assigned to Dispensary service must be in prompt and regular attendance at the Dispensary between the hours of 1:00 and 2:15 p.m.

GENERAL REQUIREMENTS FOR GRADUATION

A candidate for the degree of Doctor of Medicine must be of good moral character, and must have satisfied all the requirements for admission, complied with all the rules and regulations of the School, and obtained credit for all the work of the complete course.

For all students entering in September, 1911, and thereafter, the complete course includes a fifth year spent as interne in an approved hospital or in laboratory studies in this School in preparation for teaching.

All students entering in September, 1912, and thereafter, must secure the degree of B.A., or B.S. from this University or an approved college, before the M.D. degree will be conferred.

MINNESOTA STATE BOARD OF MEDICAL EXAMINERS

Requirements for License

Examinations are held in the months of January, April, June, and October.

Candidates are required to take examinations in the following subjects: Anatomy, Physiology, Chemistry, Histology, Materia Medica, Therapeutics, Preventive Medicine, Practice of Medicine, Surgery, Obstetrics, Diseases of Women and Children, Diseases of the Nervous System, Diseases of the Eye and Ear, Medical Jurisprudence, and such other branches as the Board shall deem advisable.

Candidates will also be required to take practical examinations in Dissections, Pathology, Histology, Bacteriology, Urinalysis, and Clinical Diagnosis.

The National Confederation of State Licensing and Examining Boards in June, 1906, adopted the requirement of one or two years of college work, including at least one year's work in Physics, Chemistry, Biology, and Languages, as the minimum entrance standard to apply to all students beginning the study of Medicine after June 1, 1910. The State Medical Board of Minnesota requires the evidence of the completion of two years' Academic work in an approved college.

STUDENT LOAN FUNDS AND PRIZES

The Gilfillan Trust Fund

The Hon. John B. Gilfillan has given to the University the sum of fifty thousand dollars, yielding an annual income of two thousand dollars, to be used by the Board of Regents to assist worthy students, needing such aid, to secure an education. The Regents are empowered to give this aid in the way of loans or gifts, according to the circumstances of the case. As a rule the fund is used as a loan fund, and a small rate of interest is charged. The details of the regulations which have been adopted by the Regents for the administration of the fund may be learned by addressing the President of the University.

The Rollin E. Cutts Prize in Surgery

Dr. Mary E. Smith Cutts, '91 Medical, has given the University, as a memorial of her husband, the late Dr. Rollin E. Cutts, '91 Medical, the sum of \$500, the income from which is to be awarded in the form of a gold medal to that member of the senior class of the Medical School who presents the best thesis showing original work upon a surgical subject.

The Dr. J. W. Bell Prize

Through the generosity of Dr. John W. Bell, Emeritus Professor of Clinical Medicine and Physical Diagnosis, an annual prize of \$100 is offered in the Medical School to the student showing the highest proficiency in Physical Diagnosis.

Candidates will be selected at the beginning of the senior year from those who have done especially good work in sophomore physical diagnosis and have maintained a uniformly high grade in general medicine throughout the junior year.

The award will be made upon the basis of the work of the sophomore, junior, and senior years in the various subjects which constitute practice.

Shevlin Fellowships

Four fellowships, each being the income from \$10,000, have been established in the Graduate School through the gift of \$40,000 by the late Thomas H. Shevlin, of Minneapolis. The donor has designated the objects of these four fellowships as follows: Academic, Agriculture, Chemistry, and Medicine.

EQUIPMENT AND FACILITIES

GROUNDS AND BUILDINGS

The medical buildings are located on the University campus, overlooking the Mississippi River. They are situated between the business centers of Minneapolis and St. Paul and close to the two most direct interurban trolley lines which enable the students to reach conveniently the hospitals of the two cities.

The Institute of Public Health and Pathology is a two-story and basement brick and stone building, of thoroughly modern and fire-proof construction. A portion of the building is devoted to the laboratory and record rooms of the State Board of Health, including the Pasteur clinic. The remainder of the building is occupied by the teaching laboratories of Pathology, Bacteriology, and Public Health, and by the research rooms and offices of the staff serving in these departments.

The new Millard Hall is a four-story and basement building of brick, stone, and concrete construction, fire-proof throughout and provided with modern systems of heating, ventilation, lighting, etc. The larger portion of the building, as designed, was completed in 1912, at a cost of \$326,400 (building \$266,400, equipment \$60,000). It houses the offices of the Dean and the Secretary and the Departments of Physiology, Pharmacology, Medicine, and Surgery.

The Institute of Anatomy is a companion building which has, in addition, a sub-basement for refrigeration and other machinery. The portion now built cost \$310,000 (building, \$243,000; equipment, \$67,000) and was occupied in 1912 by the Departments of Anatomy and Obstetrics.

The courses in organic chemistry are taught in the School of Chemistry. These courses are now an integral part of the curriculum of the Medical School, but they will shortly be made pre-medical subjects.

The School of Chemistry at present occupies two buildings on the old university campus, but the Legislature of 1911 appropriated \$405,000 for the erection of new chemical laboratories, which are in process of building on the new campus.

CLINICAL FACILITIES

In addition to the clinical facilities which are generously offered by the hospitals of Minneapolis and St. Paul, the University conducts a hospital service of its own. The Medical School opened temporary medical and surgical wards and a University School for Nurses in six buildings on the new campus in March, 1909. The operation of these proved the exceptional adaptation to educational purposes of a hospital service conducted by the School itself.

UNIVERSITY HOSPITALS

The first building of the permanent hospital group was made possible by the gift of the late Dr. and Mrs. A. F. Elliot and Mr. Walter J. Trask, their executor, of Los Angeles, California. This gift, which amounted to \$113,000, was supplemented by an accrued interest to the amount of \$7,000, and by a legislative appropriation of \$40,000, making a total of \$160,000 available for the construction of a hospital building. A beautiful site was chosen upon the ground which constitutes a part of the new medical campus overlooking the Mississippi River, which was provided by a subscription fund of \$42,000 contributed by citizens of Minneapolis. The building was completed and occupied in September, 1911. It is fire-proof, sound-proof, and in every way adapted to teaching purposes.

The temporary hospitals provided 60 beds for patients, and of these one building, with a capacity of 24 beds, is retained for isolation purposes. The Elliot Memorial Building has 135 beds. It is the first building of a projected hospital system having an ultimately large capacity.

Patients are admitted to the service only upon the certificate of physicians of the State, which testifies to the applicant's inability to pay ordinary hospital charges and physician's fees, and which states the character of the case. No paying patients are received.

The hospital system is planned for the attainment of the highest possible results in the interest of patients and students alike, and demands the constant and devoted service of every member of the clinical staff. The laboratory departments co-operate with the staff physicians, and every resource of modern medical science is made available for the accurate diagnosis and treatment of diseases and for the application of the best clinical methods in the teaching of medicine.

Surgical clinics are held in the University Hospitals from 8:30 to 11:30 a.m. every Thursday and Saturday by the Hospital Staff.

AFFILIATED HOSPITALS

The members of the Faculty are adequately represented upon the attending and consulting staffs of the hospitals of the two cities. Although almost the entire clinical service of both public and private institutions has been placed at the disposal of the School, the regular clinics are now confined to three hospitals, viz., the University Hospital, the City and County Hospital, St. Paul, and the City Hospital, Minneapolis. Negotiations are now proceeding whereby a certain part of the services in the latter two hospitals shall be under direct University control. The advantages to the student resulting from such an arrangement are evident.

The junior and senior classes are divided into small sections and are assigned in rotation, not only to the University hospital service, but also to the services of these allied institutions. The opportunities of observation and case study are thus greatly multiplied and the student is brought into constant and close touch alike with teacher and patient.

The St. Paul City and County Hospital has a capacity of 616 beds and is the largest and most complete of its kind in the Northwest. Many

of the members of its staff are on the Faculty and its entire clinical facilities are at the disposal of the School. It enters over 5,500 patients annually, a large proportion of whom are of the emergency order or are suffering from acute disease. The opportunities for bedside instruction are very great and the hospital theatres, which are new and perfectly appointed, are maintained for teaching purposes. A recent and thoroughly modern fire-proof pavilion for contagious diseases is provided, where the students have unexcelled opportunities to study diphtheria, scarlatina, erysipelas, etc. A separate building is provided for midwifery and senior students see labor cases under the personal supervision of the Professors or Instructors in Obstetrics.

The Orthopedic Department receives a large number of crippled and deformed children and houses the State Hospital for Crippled and Deformed Children. All of this work is under the direction of the Professor of Orthopedic Surgery of this School.

The City Hospital, Minneapolis, places its entire clinical material at the command of the clinical teachers of the University. It is a large, thoroughly modern hospital with splendid equipment. A new wing is under construction, to be occupied in the spring of 1913, when the hospital will have a capacity of 700 beds. During the year 1912, 3,028 patients were treated in the hospital and 9,666 patients in the out-patient department and hospital dispensary. A contagious ward furnishes excellent opportunities for bedside clinical instruction in contagious diseases under the direction of the Professor of Diseases of Children. In the City Hospital, bedside and amphitheatre clinics in medicine and surgery are conducted daily throughout the year by members of the Faculty. Clinics in diseases of the skin, nervous diseases, obstetrics, etc., are likewise given in the hospital throughout the school year. A special feature is made of medical bedside clinics in the wards of the hospital conducted for small sections of senior students, during the year, by members of the Faculty.

Internships for Juniors.—Four internships during the summer months are available at the State Hospital for the Insane, St. Peter, Minnesota, where most excellent opportunities are afforded for clinical and laboratory study of general disease processes, as well as in the special field of mental and nervous diseases, under the direction of Dr. R. M. Phelps, Superintendent, and his associates. A similar internship is available in the hospital of the State School for the Feeble-minded at Faribault under the direction of Dr. A. C. Rogers, Superintendent, and his staff.

OUT-PATIENT SERVICE

The University owns a clinical building situated upon the west side of the Mississippi River, within a few hundred yards of the campus, in which a dispensary service has long been conducted. This service has now been associated with the University Hospital as its Out-patient Department and is under the same general organization.

The out-patient service is manned by members of the general staff and clinical assistants under the direction of a chief of staff. Its service

is divided into medical, surgical, gynecological, obstetrical, children's, eye and ear, nose and throat, skin, genito-urinary, nervous and mental, and orthopedic clinics. In these, some 35,000 consultations are recorded each year.

Senior students are required to attend the clinics daily and are drilled in the taking of histories, in the making of physical examinations, the writing of prescriptions, etc. Sections of senior students are assigned each day to the out-patient pharmacy and to the clinical laboratory, where they have opportunity to fill prescriptions and to make clinical diagnoses. The Out-patient Department also provides a resident service for senior students, which is elective and open to a limited number. Students selecting this service are required to reside at the dispensary and attend emergency, accident, or sick calls, under the direction of the staff. An externship has also been established in the Out-patient Department, and will be open to competitive examinations for appointment.

An obstetrical out-service department is well established and obstetrical cases are assigned to sections of senior students under the direction of some member of the staff in this field. So far as possible, these cases are referred to the University Hospital for care and attendance.

The tuberculosis clinic of Hopewell Hospital, Minneapolis, is also open to students.

LIBRARY RESOURCES OF THE SCHOOL OF MEDICINE

The Medical School Library consists of the following collections: (1) the general clinical library, (2) the departmental libraries of Medicine, Surgery, Anatomy, Pathology and Bacteriology, Physiology and Pharmacology. The clinical collection is housed in Millard Hall, with about 8,000 volumes and 8,000 separats, etc. The reading room in connection with this Library is open daily and in the evenings up to 10:00 o'clock for purposes of reference and study. The departmental libraries are housed in the buildings containing the laboratories, so that the literature relating to these subjects may be more readily available for the use of students and investigators in these departments. The departmental collections amount to about 6,000 volumes and 22,000 separats, etc.

The above library collections contain complete files of many of the important periodicals and over 200 current journals are received. In addition there are available the libraries of the Colleges of Dentistry and Pharmacy, and of the State Board of Health laboratories, amounting to some 4,000 volumes. The Hennepin County Medical Society Library, with 5,000 volumes and large collection of separats, and the Ramsey County Medical Society Library, with some 7,000 volumes, are conveniently located and open for reference purposes to the students of the School. The above libraries make available about 30,000 volumes, some 35,000 separats, and several hundred periodicals.

Within recent years, a number of valuable collections have been donated to the Medical School Library, and with the present fire-proof buildings, metal shelving, and adequate facilities for cataloguing,

etc., the Library is in position properly to take care of all donations which may be made in the future. Among these gifts should be noted the working library of the late Professor William His, of Leipzig, about 8,500 titles, the gift of Messrs. A. F., J. S., and C. S. Pillsbury; the valuable library on Ophthalmology of Professor Hermann Cohn, of Breslau, numbering some 2,000 titles, donated by Drs. C. J. and C. S. Spratt.

Dr. Charles A. Wheaton, of St. Paul, Emeritus Professor of Surgery, has donated his very valuable private surgical library of about 2,000 volumes.

Dr. Charles Lyman Greene, Professor of Medicine, has donated his private library, including many valuable sets of periodicals.

Dr. James E. Moore, Professor of Surgery, has also donated his very valuable surgical library.

The private collection on Skin and Genito-urinary Diseases, of the late Dr. M. P. Vander Horck, was donated to the Library by Mrs. Vander Horck.

The general University Library contains some 145,000 bound volumes, 30,000 unbound volumes and pamphlets, and about nine hundred current periodicals. The public libraries of Minneapolis, with 160,000 volumes, and of St. Paul, with some 90,000 volumes, the State Historical Library of 85,000 volumes, and the State Library of 59,000 volumes, the Library of the Minnesota Academy of Natural Sciences of some 12,000 titles, place before the student the greater part of the important literature relating to all branches of the physical and natural sciences as well as works of general culture and those pertaining particularly to medicine. All of these collections are readily accessible to the student.

COURSES OF INSTRUCTION

THE COURSE IN MEDICINE

The course in Medicine requires a minimum of seven years of work: two years in a recognized college of arts and sciences, and five years in the Medical School. The years in the Medical School are termed respectively third, fourth, fifth, sixth, and seventh year.

For students entering the Medical School since September, 1911, the fifth year of residence in the Medical School will be spent either (a) as interne in a hospital which is approved by the Administrative Board, or (b) as an advanced student in one of the laboratories of this School in preparation for teaching. The M.D. degree will not be conferred until the close of this year of hospital internship or of advanced study.

The intention of the Faculty in establishing the year of hospital internship is to require of all candidates for the M.D. degree a year of clinical experience under competent supervision and in well-equipped modern hospitals. For this purpose a list of approved institutions in this and other states is being prepared. In the University Hospitals and those of the Twin Cities the work of the interne will be under the close observation of members of the staff of instruction of this School, and it is expected that the staffs of other hospitals will make official detailed reports upon the work of such students as become internes in their institutions.

The object of this hospital year is to ensure to the public competent practitioners and to give to the graduates of this School further assurance of efficiency in their profession.

In January, 1912, the Faculty decided that in order to encourage men with medical training to enter the profession of teaching in laboratory subjects in medical colleges, it was wise to offer to those who show especial promise in scientific work a year of advanced work in the laboratories of the college, in lieu of this year of hospital internship. Upon the successful completion of a year of special studies such students will be granted the M.D. degree. Students desiring to avail themselves of this must indicate their intention not later than the middle of their sixth year and must receive the approval of the head of the department in which they wish to work and of the Administrative Board.

The twenty-fifth annual course of study in this School will begin on Wednesday, September 17, 1913, and will continue nine months, or thirty-six weeks, exclusive of holidays, closing upon Saturday, June 6, 1914. The School year is divided into two semesters: the first semester ends January 31, 1914. The last week is devoted mainly to mid-year examinations which will be conducted in many of the departments. The second semester will begin February 4, 1914 and close June 6, 1914. Certain of the courses of study terminate at the end of the first and third

quarters, on November 11, 1913, and April 4, 1914. Commencement exercises will occur in common with the other departments of the University during the week ending June 13, 1914.

EIGHT-YEAR COURSE LEADING TO THE DEGREES OF BACHELOR OF ARTS AND DOCTOR OF MEDICINE

Students who have completed their junior work in the College of Science, Literature, and the Arts in this University may elect the first year's work in the Medical School as the work of their senior academic year, and, upon satisfactory completion of the same, will receive the degree of Bachelor of Arts from that College. (See also Bulletin of the College of Science, Literature, and the Arts.)

Students entering upon the medical part of this eight-year combined course must present evidence of having fulfilled all the requirements for admission stated on page 7 of this Bulletin.

Carleton and Macalester Colleges have entered into an arrangement with the University of Minnesota whereby students of these colleges have the same opportunities in this regard as those of the College of Science, Literature, and the Arts of this University.

By this arrangement students who have completed the five years' work in Medicine will have received both degrees in a period of eight years. As this course gives greater opportunity for elective studies in the Academic College it is strongly recommended.

SEVEN-YEAR COURSE LEADING TO THE DEGREES OF BACHELOR OF SCIENCE AND DOCTOR OF MEDICINE

In the year 1903-04, the University established a six-year course of study arranged especially for students of medicine. This course has now been lengthened to seven years as previously indicated and is required of all who do not take the eight-year course described above. The first two years are given in the College of Science, Literature, and the Arts, of the University of Minnesota or other approved institution, and the last five years are given in the Medical School. The course leads to the degree of Bachelor of Science at the end of the first four years; and to the degree of Doctor of Medicine at the end of the seven-year course.

The student must complete during the two years of academic work all the courses listed under *Requirements for Admission* on page 7, or their equivalent in other approved colleges.

The work of the four years of class instruction in medicine is listed in the schedule at the end of this Bulletin.

SPECIAL STUDENTS AND SUMMER WORK

Special students, properly qualified, whether they be graduates in medicine or not, may be admitted to many of the courses offered in the Medical School.

During the summer of 1913 and each summer thereafter, a special Summer Session will be conducted by the departments of the Medical School. The courses will be of such a nature as to be attractive to physicians in general practice, as well as to undergraduates. For the details of these courses a special bulletin may be obtained, either from the office of the Dean of the Medical School or from the University Registrar.

GRADUATE WORK

Students in the Medical School may become candidates for the degree of Master of Arts, Master of Science, or Doctor of Philosophy in the Graduate School. Candidates must have received the bachelor's degree from this University or an approved college, and in addition to the work credited toward the M.D. degree, must pursue courses of study conforming to the regulations of the Graduate School. Students looking forward to teaching may offer the advanced laboratory work of their post-senior year toward any of these graduate degrees.

Opportunity is offered for students registered in the Graduate School to take majors or minors for the degree of Master of Arts, Master of Science, or Doctor of Philosophy in advanced courses in Anatomy, Bacteriology, Embryology, Histology, Neurology, Pathology, and Physiology in the Medical School.

In all cases the students must comply with the rules and regulations of the Graduate School of the University of Minnesota. Students registered in the Graduate School pay a fee of ten dollars. The amount of additional charges for the various laboratory or other courses open to special or graduate students can be learned at the office of the Dean of the Medical School.

THE SCHOOL FOR NURSES

The School for Nurses is conducted in connection with the hospital service under the control of the Medical School.

It is in charge of a Superintendent, assisted by a teaching staff selected from the Faculty of the Medical School, under the direction of a Committee on the School. While the undergraduates of the school constitute, in part, the nurses' corps of the University Hospital, the School exists primarily for the efficient education of nurses. It is the first training school in the United States under direct university control.

A four years' high-school course is the minimum requirement for admission. Preference will, however, be given to women of superior preliminary attainments. Applicants are required to undergo a general physical examination to determine their fitness for the service, and are expected to present suitable business and social references.

A preliminary four months' course of instruction in Anatomy, Physiology, Chemistry, Bacteriology, Pharmacology, English, Physical Culture, Principles of Nursing, and Hospital and Household Economics

is given to the students of the school in the laboratories and lecture rooms of the University.

Examinations at the close of this course must be successfully passed. Students during this four months' course are not in residence. The course is under a fee of \$25.

Students who have completed the preliminary course are admitted to the hospital service on two months' probation.

Upon final acceptance they are entered for the remaining two and one-half years' work in hospital. They will serve in rotation in the medical and surgical wards for men and for women, in the obstetric service, in special departments of practice, and in their senior year will be assigned to out-patient clinics and visiting nursing. Lecture courses, in connection with the practical training, are given by members of the Faculty and by the Superintendent throughout each year. Examinations will be held at the close of each year's work.

The complete course will lead up to the degree of Graduate in Nursing, conferred, upon recommendation of the Faculty, by the Board of Regents of the University.

Graduates will be admitted upon competitive examination to a post-graduate course, during which they will serve in the capacity of head nurses and will be given the opportunity to pursue special lines of study.

DEPARTMENTAL STATEMENTS

DEPARTMENT OF ANATOMY

CLARENCE MARTIN JACKSON, M.S., M.D., Professor of Anatomy and
Director of the Department

THOMAS G. LEE, B.S., M.D., Professor of Comparative Anatomy

JOHN B. JOHNSTON, Ph.D., Professor of Comparative Neurology

CHARLES A. ERDMANN, M.D., Associate Professor of Applied Anatomy

RICHARD E. SCAMMON, Ph.D., Assistant Professor of Anatomy

WILLIAM F. ALLEN, M.A., Instructor in Histology and Embryology

E. A. BAUMGARTNER, M.A., Instructor in Histology and Embryology

R. T. LAVAKE, B.A., M.D., Associate in Anatomy

W. E. CAMP, B.A., Assistant Demonstrator in Anatomy

E. R. HOSKINS, M.A., Assistant Demonstrator in Anatomy

L. P. BELL, B.S., Teaching Assistant in Anatomy

Departmental Office in the Institute of Anatomy

The Department of Anatomy is housed in the recently erected Institute of Anatomy, and provides for undergraduate instruction in the following branches: dissections, histology, neurology, embryology, osteology, topographical and surgical anatomy, anatomical technique, and for graduate work in any of the several branches of anatomy.

The Institute of Anatomy is situated on the new campus on the south side of Washington Avenue. The present structure comprises a central portion and one wing, provision being made for a future second wing. The central portion measures 100 by 64 feet, and the wing 140 by 64 feet, and consists of a basement, first, second, and third floors. A roof-house forming a fourth story extends over a portion of the building, and there is also a sub-basement under the present wing. The total floor space amounts to about 60,000 square feet. There was appropriated for the erection of the building \$243,342.00, and for the equipment of the same, \$67,200.00.

The various anatomical courses occupy portions of the third, fourth, and fifth years of the college work. In the third year osteology, histology and splanchnology, dissection, and embryology are studied; in the fourth year neurology, anatomy of the special sense organs, and topographical anatomy. In the fifth year provision is made for additional work in surgical and applied anatomy. These courses are arranged in sequence in relation to each other and to the other departments of work in the School.

Each student is loaned a box containing a human skeleton for the purpose of study in osteology. In histology, in embryology, and in neurology, in addition to specimens completed by the students them-

selves, there are very large collections of specially prepared sets of slides and series of embryos which are loaned to the student during the course.

The departmental library contains a carefully selected and rapidly growing collection of reference literature, both standard and periodical. All of the anatomical periodicals are received and complete sets of nearly all are available. An important addition to the library was the gift of the working anatomical collection of the late Prof. William His, of Leipzig. The other libraries of the University, as well as those of the Twin Cities, render it possible to consult practically all of the important anatomical and biological literature.

Opportunities for Advanced and Graduate Students

The Institute of Anatomy is in position to offer excellent facilities in the form of rooms, material, apparatus, reagents, literature, assistance in the preparation of plates and in securing the proper publication of research work, and the advice and aid of the entire staff to advanced and graduate students who desire to pursue work in any phase of human or vertebrate anatomy, gross or microscopic, histology, embryology, neurology, osteology, cytology, etc.

A. To graduates in Medicine or advanced medical students to undertake special work in anatomy, in its relation to clinical medicine and surgery.

B. To graduate students to take work in some branch of anatomy as a minor or to pursue original investigation in anatomy as a major leading to the degree of M.A., M.S., or Ph.D.

For minors, see Courses 1, 2, 3, 4, 5, 16, 21, 22; for majors, see Courses 5, 16, 18, 20, 22.

C. To properly qualified students who intend fitting themselves for teaching positions in any branch of anatomy, aid in the form of scholarships, fellowships, positions of assistants or research assistants will be provided wherever possible.

1. Histology and Splanchnology of Man and Vertebrates

Assistant Professor SCAMMON, Messrs. CAMP and BELL

Three lectures and nine hours laboratory per week; third year, first semester. Prerequisite, Zoology 1 or equivalent.

The structure and properties of protoplasm; the cell, its structure; the phenomena of cell division. A comparative study of the histology of the epithelial, connective, and muscular tissues, the blood, and the vascular and lymphatic systems of man and vertebrates, followed by a comparative study of the anatomy, gross and microscopic, of the various organs of the alimentary, respiratory, and urogenital, cutaneous, vascular, and lymphatic systems.

2. Comparative Embryology of Man and Vertebrates

Professor LEE, Assistant Professor SCAMMON, and Mr. HOSKINS

Two lectures and six hours laboratory per week; third year, second semester. Prerequisite, Zoology 1 or equivalent.

A comparative study of reproduction, the germ cells, fertilization, cleavage, implantation of ovum, formation of germ layer, fetal membranes, placenta, formation of body.

The histogenesis of tissues, development of organs. The course includes practical work upon a large collection of series of embryos cut in various planes and representing all phases of development. The elements of teratology are considered as far as time permits.

3. Human Osteology

Professor JACKSON, Associate Professor ERDMANN, and Dr. LAVAKE
Third year, first semester.

Lectures, recitations, and laboratory work upon the human skeleton and supplementary work on the osteology of the other vertebrates. A practical study of the skeleton, followed by recitations from the specimen.

4a. Dissections

Professor JACKSON, Associate Professor ERDMANN, and Dr. LAVAKE

Twelve hours per week; third year, first semester. Prerequisite,
Zoology 1 or equivalent.

The student makes a complete dissection of all the structures of either the upper or lower half of the human body, using text-books, atlases, and models as guides. The work is largely independent, and a dissection must be completed in the quarter in which it is undertaken.

4b. Dissections, Continuation of Course 4a

Professor JACKSON, Associate Professor ERDMANN, and Dr. LAVAKE
Nine hours per week; third year, second semester.

In this course the student completes the dissection of the other half of the human body.

5. The Human Nervous System Professor JOHNSTON and Mr. ALLEN

Two lectures and seven hours laboratory; first semester. Prerequisite, Anatomy 1 and 2; or Zoology 2 or 5.

The special sense organs and the central nervous system are studied by dissection and in microscopic preparations. The student makes a full dissection of the eye and other sense organs, and of the fiber paths in all segments of the human brain. Each member of the class is supplied with a series of sections of the brain stem (every twentieth transverse section) and with numerous preparations of the spinal cord, cerebellum, cortex, and other regions stained by the Nissl, Golgi, Weigert, and other methods. In these the fibre tracts and nerve centers are worked out in comparison with the dissections. A large collection of mammalian and fetal and adult human preparations is used for demonstration.

This course may precede or follow Course 16. Both should be taken by candidates electing neurology as a major for the M.A. or as a minor for the Ph.D. degree.

6. Topographical Anatomy

Professor JACKSON

Two lectures and two hours laboratory work per week; fourth year, second semester.

A study of frozen sections, special dissections, and work on the living models in preparation for the work in clinical medicine.

7. Surgical and Applied Anatomy

Associate Professor ERDMANN

Two lectures and two hours laboratory work per week; fifth year, first semester.

A comprehensive review of the relationship of anatomical structures in their application to clinical surgery, comprising surface anatomy, the outlining of organs, the location and significance of landmarks, determination of blood vessels and nerves, regional anatomy, influence of muscles in fractures, etc. Instruction is given by means of the living model, cadaver, special dissection, the lantern, models, and a study of frozen sections.

11. Course in Descriptive Anatomy for Dental Students

Messrs. BAUMGARTNER and HOSKINS

Six hours lectures and recitations, six hours laboratory work per week; first year, first semester. A specially planned course open only to dental students.

12. Dental Histology and Embryology

Professor LEE, Messrs. ALLEN, CAMP, and ASSISTANTS

Two lectures and six hours laboratory work per week; first year, second semester. A modified and specially arranged course, open only to dental students.

The structure and histogenesis of the organs and tissues of the body, the structure and development of the teeth and jaws, mouth cavity, and glands.

13. Course in Dissection for Dental Students

Messrs. BAUMGARTNER, HOSKINS, and ASSOCIATES

Twelve hours per week laboratory and recitations; first year, second semester. Open to dental students only.

14. Course in Anatomy for Nurses

Associate Professor ERDMANN

Lectures, recitations, demonstrations, and laboratory exercises three hours per week, one semester.

16. Comparative Neurology of Vertebrates

Professor JOHNSTON

Two lectures and eight laboratory hours; either semester. Prerequisite, Zoology 2 or 5; or Anatomy 1 and 2.

Intended for graduates; open by permission to juniors and seniors who meet the requirements. See note to Course 5. This course should be taken by students preparing for teaching in neurology.

18. The Evolution and Structure of the Cerebral Cortex

Professor JOHNSTON

Elective; either semester. Prerequisite, Course 5 or 16.

A study of the cerebral cortex with especial reference to the localization of function and the processes by which localization has been determined.

19. Neurological Technique

Professor JOHNSTON

Elective; either semester. Prerequisite, Course 1.

Practical work in the preparation of the nervous system for gross and microscopic study.

20. Research in Neurology

Professor JOHNSTON

Credit in proportion to work done; either semester.

Qualified students may undertake the investigation of problems in either human or comparative neurology.

21. Anatomical Technique

Professor LEE

An elective course of lectures and practical laboratory work; either semester.

The work consists of a careful study of the principles and practice of microtechnique, fixation, sectioning, staining, making drawings for illustrations, methods of reconstruction, injection, corrosion methods, museum methods, etc., of special value to those who intend qualifying for laboratory positions.

22. Research in Human and Comparative Vertebrate Anatomy

Professors JACKSON and LEE and Assistant Professor SCAMMON

Courses in any of the following subjects as minors in Anatomy, or original investigation in one of the above subjects as a major in Anatomy, may be arranged for by properly qualified students who are candidates for degrees of M.S., M.A., Ph.D., or D.Sc.

- (a) Dissections: special comparative studies in man and vertebrates of problems in the musculature, vascular systems, organology, etc.
- (b) Osteology: human and comparative.
- (c) Craniometry: human and comparative.
- (d) Topographic anatomy: special problems, human and comparative.
- (e) Anatomy as applied to Art.
- (f) Comparative embryology of man and vertebrates.
- (g) Experimental embryology.
- (h) Special studies on the germ cells.
- (k) Histogenesis: human and comparative.
- (l) Cytology.
- (m) Histology: special comparative studies in human and vertebrate tissues.
- (n) Microscopic anatomy of man and vertebrates.

A. Courses as minors in any of the above subjects consist of two hours lecture, one hour recitation, and six hours laboratory work per week for one semester or six credits (in certain courses it may be arranged to extend the course through the year or three credits per semester). Prerequisites to any of the above courses are Anatomy 1 and 2, or 3 and 4, or equivalent.

B. Properly qualified students may arrange to undertake research work in any of the above subjects as a major, subject to the rules and regulations of the Graduate School.

25. Anatomical Journal Club and Seminar

Weekly meetings during the year for reviews of the current literature and discussion of special topics in Anatomy, Histology, Embryology, and Neurology, and of the research work being carried on in the department.

The following text-books should be consulted:

Dissection and Splanchnology.—Piersol, Cunningham, Morris, Poirier and Charpey, Rauber-Kopsch; Spalteholtz Atlas; Baker, Laboratory Manual; Cunningham, Manual of Dissection; Treve, Applied Anatomy; Quain, Anatomy; Flower, Osteology of Mammals; Gegenbauer, Elements of Comparative Anatomy; Wiedersheim, Elements of Comparative Anatomy; McClellan, Regional Anatomy; Deaver, Surgical Anatomy; Hildebrand, Chirurgisch Topographische Anatomie; Schultze, Applied Anatomy; Eisendrath, Clinical Anatomy; Boxe and Eccults, Applied Clinical Anatomy.

Histology and Microscopic Anatomy.—Stohr-Lewis, Histology; Quain, Splanchnology, 11th edition; Piersol, Histology; Bohm-Davidoff-Huber, Histology; Schaefer, Histology; Bailey, Histology; Ferguson, Histology; Szymonowicz-MacCullum, Histology; Sobotta-Huber, Atlas; Lee, Vade Mecum; Kolliker, Gewebelehre; Oppel, Mikroskopische Anatomie.

Neurology.—Van Gehuchten, Systeme Nerveux; Johnston, Nervous System of Vertebrates; Barker, Nervous System; Edinger, Vorlesungen und Einleitung; Cajal, Sistema Nervioso; Kolliker; Obersteiner; Bechterew; Dejerine; Atlases by Sabin, Marburg, Nebelthau, Retzius, Bruce, Hasse.

Embryology.—Keibel and Mall, Human Embryology; Quain, Embryology, 11th edition; Minot, Laboratory Text-book; Minot, Human Embryology; Bailey-Miller, Embryology; Hertwig-Mark, Embryology; Heisler, Embryology; Marshall, Embryology; Kolliker, Embryologie; Schultze, Embryologie; Kollmann, Embryologie; Schenk, Embriologie.

DEPARTMENT OF PHYSIOLOGY

ELIAS POTTER LYON, Ph.D., M.D., Dean, Professor of Physiology, and
Director of the Department

RICHARD OLDING BEARD, M.D., Secretary, and Associate Professor of
Physiology

FREDERICK H. SCOTT, M.B., Ph.D., D.Sc., Associate Professor of Phys-
iology

M. RUSSELL WILCOX, M.D., Assistant Professor of Physiology

C. J. V. PETTIBONE, Ph.D., Instructor in Physiology and Physiologic
Chemistry

FRANCIS B. KINGSBURY, Ph.D., Instructor in Physiology and Physio-
logic Chemistry

Departmental Office in Millard Hall

The Department of Physiology is fully equipped in its new quarters in Millard Hall. It occupies about three-fifths of the space provided in the building. Lecture amphitheatres are shared with other departments. A students' laboratory of experimental physiology, which has a capacity of 96 students; and two students' laboratories for physiologic chemistry, with a combined capacity of 84 students; a large demonstration room; a number of small apartments for secluded study of special sense phenomena, with special laboratories for graduate work, make ample provision for the care of classes. In addition, offices and private laboratories for individual members of the staff, a number of small laboratories for experimental studies in special lines, storerooms, diet-kitchen, combustion room, electro-cardiograph galvanometer chamber, and animal rooms complete the thoroughly modern and sanitary equipment of the department. The department maintains a special library to which students are admitted for purposes of collateral reading or bibliographical inquiry.

Under the concentration system in vogue, one-third of the student's time is occupied with this study during one semester of the first and approximately one-half of the time during one semester of the second year.

Each phase of the subject is treated as a unit, i. e., the laboratory courses in physiologic chemistry, experimental physiology, physical chemistry, etc., are correlated and interwoven with the lecture courses. The work is essentially practical and is individualized as much as possible.

In the third year of the course, the student takes up the study of the physiologic components of the animal body; the physiologic and

physical properties of tissue-cells in general; the nutritive media; the neuromuscular mechanisms; and the circulation.

In the fourth year, the same methods are applied to the study of digestion, secretion, respiration, and excretion, and to the problems of metabolism and nutrition. The student makes a complete nutritive balance, based upon a series of actual feeding experiments, including the analysis of a standard dietary, the qualitative and the quantitative examination of the feces and urine, the estimation of total and differential nitrogens, and the determination of respiratory quotients. As a phase of the study of nutrition, the physiology of development and the distinctive physiologic conditions of successive ages of human life are discussed.

Later the student takes up the physiology of the nervous system, special attention being paid to the observation and testing of special sense phenomena, cerebral localization, etc.

1. General Cellular Physiology

Professor LYON, Associate Professors BEARD and SCOTT, Messrs. PETTIBONE and KINGSBURY

One hundred and twenty-five hours; third year, third and fourth quarters.

The chemistry of the physiologic components of the animal body; the physiologic and physical properties of the tissue cells in general; the specializations of function; the nutritive media, including methods of blood examination.

2. The Musculo-nervous Mechanisms

Professor LYON, Associate Professors BEARD and SCOTT, Messrs. PETTIBONE and KINGSBURY

Fifty hours; third year, fourth quarter.

The study of the physiologic chemistry of nerve and muscle tissues; the phenomena of muscle and nerve action; the principles of nerve control in general; the nature of stimuli and the phenomena of stimulation; elementary study of the nervous system reflexes.

3. Systemic Physiology (circulation)

Professor LYON, Associate Professors BEARD and SCOTT

Fifty hours; third year, fourth quarter.

The vascular mechanism, including the estimation of blood pressure, the mapping of cardiac areas, the study of heart sounds, and the making of sphygmograms.

4. Systemic Physiology (digestion, respiration, excretion)

Professor LYON, Associate Professors BEARD and SCOTT, Messrs. PETTIBONE and KINGSBURY

One hundred and twenty-five hours; fourth year, first quarter.

The digestive system, including the process of secretion, the analysis of the digestive fluids, the examination of the normal stomach contents, and the conduct of digestion. The respiratory mechanisms; the mechanics, physics, chemistry, and nerve control of respiration. The excretory system, including the study of excretion by the air passages, the intestinal tract, the skin, and the kidney. Analysis of the physiologic urine is addressed both to the determination of functional facts and to the attainment of the technique of clinical diagnosis in this field.

5. Metabolism and Nutrition

Associate Professors BEARD and SCOTT, Messrs. PETTIBONE and KINGSBURY

Eighty-five hours; fourth year, first and second quarters.

A study of metabolic and nutritional problems for the determination of nutritive balance, nitrogenous and body equilibrium, and specific dietetic results; including the analysis of standard dietaries and the further examination of the normal stomach contents and the fecal debris, the estimation of nitrogen excretion in total and differential forms, the relation of fat splitting and fat absorption, and the determination of respiratory quotients, etc.

6. The Physiology of Development

Associate Professor BEARD

Fifteen hours; fourth year, second quarter.

A study of the physiology of the ovum, the embryo, and the fetus; of birth, infancy, childhood, puberty, menstruation, ovulation, pregnancy, parturition, maturity, and old age.

7. The Physiology of Special Sense Organs

Associate Professors BEARD and SCOTT, and Assistant Professor WILCOX

Sixty-two hours; fourth year, second and third quarters.

A study of the phenomena and conditions of special sense function and of the means of determining its acuity, range, etc.

8. The Physiology of the Central Nervous System

Professor LYON and Associate Professors BEARD and SCOTT

Eighty hours; fourth year, second quarter.

Advanced study of the physiology of nerves, including stimulation of nerves in man, phenomena of degeneration, etc. A study of the functions of the nervous system in general, including the functional relations of nerve tracts, association paths, and central localization.

9. The Physiology of Nutrition

Associate Professor SCOTT

Elective.

10. The Physiology of Accommodation

Assistant Professor WILCOX

Elective.

Text-Books, First and Second Year.—Howell, Text-book of Physiology; Starling, Human Physiology; Abderhalden, Physiologic Chemistry.

Collateral Reading.—The American Text-book of Physiology; Hammarsten, Physiologic Chemistry; Von Noorden, Text-book of Metabolism; Stewart, Manual of Physiology; Tigerstedt, Physiology; Blyth, Foods and their Composition; Friedenwald and Ruhr, Diet in Health and Disease; Ott, Text-book of Physiology; Hutchinson, Applied Physiology; and Lusk, Science of Nutrition.

DEPARTMENT OF PHARMACOLOGY

ARTHUR D. HIRSCHFELDER, B.S., M.D., Professor of Pharmacology and
Director of the Department

EDGAR D. BROWN, Phm.D., M.D., Associate Professor of Pharmacology
....., Instructor in Pharmacology

Departmental Office in Millard Hall

The courses in Pharmacology and Materia Medica are graded in the fourth and fifth years. By lectures, demonstrations, labora-

tory experiments, and recitations, the student is familiarized with the structure and character of drugs and with pharmaceutical preparations. He observes and experimentally determines the chemistry and physiologic action of drugs; learns the principles and is drilled in the practice of prescription writing; and discusses the indications of therapeutic use.

1. Elementary Pharmacy, General Toxicology, and Principles of Prescription Writing

Professor HIRSCHFELDER and Associate Professor BROWN

Eight hours lectures or recitations per week; fourth year, fourth quarter.

The course includes the following subdivisions:

(a) Elementary pharmacy; the gross, microscopic, and chemical structure of drugs; weights and measures; pharmaceutical processes; and classes of pharmaceutical preparations.

(b) General treatment of poisoning; principles of prescription writing and incompatibilities; principles and rules of incompatibility; rules for solubility; construction of prescriptions; grammar and phrases of prescription-Latin, with class practice in writing simple prescriptions; use and materia medica of flavors.

(c) Materia medica is studied from the crude drugs and pharmaceutical preparations taken from the museum of materia medica to which the students have access at all times.

2. General Pharmacodynamics (Experimental)

Professor HIRSCHFELDER and Associate Professor BROWN

Nine hours per week; fourth year, fourth quarter.

Experiments on cold-blooded and warm-blooded animals, illustrating the action of drugs and the methods of pharmacologic experimentation. The class is divided into sections and these sections into groups of three to six students, each group performing experiments in the same line, but by modified methods, using different drugs having a similar pharmacologic action. The results are discussed at conferences and the conclusions arrived at from the sum of the results. The knowledge thus obtained is by direct observation and serves to impress the student with the actions of drugs, and prepares him for the systematic didactic courses given in the fifth year.

The experimental course includes the following subdivisions:

(a) Actions of drugs on tissues outside the body, corrosives, hemoglobin, osmosis, etc.

(b) Exercises on intact mammals, absorption and excretion of drugs; racial idiosyncrasy; treatment of poisoning; emetics; convulsants and depressants; pulse, pupils, salivation, etc.

(c) Exercises on frogs, convulsants, central depressants, local anesthetics, on striped and cardiac muscles, cardiac nerves, etc.

(d) Operative work on mammals, general anesthetics, the effects of important drugs on blood pressure, respiration, oncometric and myocardiographic work, diuresis, peristalsis, perfusion of excised organs, isolated heart, etc.

3. Systemic Pharmacology, Toxicology, Materia Medica, and Therapeutics, Prescription Writing.

Professor HIRSCHFELDER and Associate Professor BROWN

Two hours lectures and recitations per week; fifth year, throughout the year.

This course is the principal didactic course given in the department. The instruction is given by lectures and recitations. Each drug or group of drugs is studied in detail under the following subdivisions:

(a) *Pharmacodynamics*. The effects of drugs are studied from the experimental and clinical evidence. Constant reference is made to the results obtained in the experimental course (Course 2).

(b) *Toxicology*. Symptoms and treatment of poisoning.

(c) *Materia Medica*. The student is required to be able to identify the more important drugs, learn their physical characters, uses, etc.

(d) *Therapeutics*. The conditions in which the drugs are rationally indicated or in which their empirical use has been found of value.

4. Practical Pharmacy

Professor WULLING

Three laboratory and lecture hours per week; fifth year, first quarter.

1. U. S. Pharmacopoeia.

(a) Metrology.

(b) Grades of drugs in use.

(c) Pharmacopoeial requirements as to purity.

2. Identity and impurities with U. S. Pharmacopoeial tests of six official substances.

3. Dispensing.

(a) The prescription.

(b) Compounding of prescriptions calling for the preparation of fourteen types of pharmacopoeial preparations.

Text-Books. Sollmann, Pharmacology, *Materia Medica* and *Therapeutics*; Ortnier, *Treatment of Internal Diseases*; Forchheimer, *The Prophylaxis and Treatment of Internal Diseases*.

Collateral Reading.—U. S. Pharmacopoeia; Thornton, *Dosebook* and *Manual of Prescription Writing*; National Dispensary; National Formulary.

DEPARTMENTS OF PATHOLOGY AND OF PUBLIC HEALTH AND BACTERIOLOGY

Provision has been made for the ultimate establishment of a separate Department of Public Health and Bacteriology. Temporarily it will be combined with Pathology and the two conducted as one department.

H. E. ROBERTSON, B.A., M.D., Associate Professor of Pathology and Acting Director of the Departments

R. H. MULLIN, B.A., M.B., Associate Professor of Public Health

E. T. BELL, B.S., M.D., Assistant Professor of Pathology

WINFORD P. LARSON, M.D., Assistant Professor of Bacteriology

WILLIAM C. JOHNSON, B.A., M.D., Instructor in Pathology

MOSES BARRON, B.S., M.D., Instructor in Pathology

MARGARET WARWICK, B.S., M.D., Instructor in Pathology

....., Instructor in Pathology

ARTHUR T. HENRICI, M.D., Instructor in Pathology and Bacteriology

....., Instructor in Bacteriology

Departmental Office in Institute of Public Health and Pathology

The Institute of Public Health and Pathology, to which attention has already been directed, provides adequate room and facilities for teaching and research in Pathology, Bacteriology, and Public Health.

The main laboratory, 56 by 75 feet, lighted on three sides and by a skylight, is used for the general or required courses. It is divided into twelve loges, each fully and independently equipped in every detail for the use of six students who are responsible for all equipment therein contained. A combined lecture and autopsy room opens both from the main laboratory and from the hall, so that autopsies, lantern demonstrations, or lectures may be given during the period devoted to the laboratory exercises without interference with the practical work.

A smaller laboratory, one-half the size of the main laboratory, is used for special work in graduate and elective courses in the diagnosis of tumors, pathology of the nervous system, practical public health, etc. The same loge arrangement obtains as in the main laboratory.

The hospitals in which members of the staff are working afford a large supply of material and frequent opportunities for post-mortem examinations. From many institutions and physicians throughout the State, valuable and interesting gross and microscopic materials are received from time to time and are made available in the museum and for microscopic use in class.

The State Board of Health Laboratory Division, including the Pasteur Institute for the study and treatment of rabies, is located in the building. This affords an abundance of illustrative material for public health, pathology, and bacteriology.

A full equipment of microscopes permits of the rental of an instrument to each student, if he is not provided with one suitable for his purpose.

1. General Pathology

Associate Professor ROBERTSON, Assistant Professor BELL, and Dr. BARRON

Fourth year, second quarter.

Lectures, demonstrations, and laboratory work on the general processes involved in disease, which include:

(a) The pathological processes dependent upon abnormal changes in the activities of the circulatory system, including anemia, congestion, embolism, thrombosis, infarction, etc.

(b) Degeneration and necrosis. Theories as to causation and chemical processes involved, with various gross and microscopical characteristics.

(c) Inflammation. The comparative features of cell and tissue reactions to various irritants. Careful study of degenerative, exudative, and proliferative processes illustrated by animal experiments and human tissues.

(d) Regeneration and repair. Studies of specimens especially prepared from experimental animals as well as autopsy and surgical material.

(e) Tumors. Theories of causation, classification, structure and pathological history of the various tumor types.

2. Special Pathology

Associate Professor ROBERTSON, Assistant Professor BELL, and Dr. BARRON

Fourth year, second semester.

Instruction is afforded by means of lectures, demonstrations of museum specimens and preparations, and laboratory work on materials secured from clinical cases and at autopsy. The course consists of instruction in:

(a) Pathology of infectious diseases, including tuberculosis, syphilis, typhoid fever, etc.

(b) Pathology of special tissues and organs, including blood, ductless glands, respiratory tract, liver, kidney, reproductive organs, and nervous system.

The important gross and microscopic lesions in all the organs are illustrated from clinical and autopsy material, fresh and preserved, and supplemented by experimental work.

3. Clinical Pathology

Dr. JOHNSON and ASSISTANTS

Fifth year, first quarter.

The course includes:

(a) The urine; a macroscopical study of its colors and sediments, and the microscopical study of blood, pus, epithelial casts, etc., in the urine of disease.

(b) The blood; the counting of red and white cells in the blood, the estimation of hemoglobin, the making of blood smears, and the fixing, staining, mounting, and study of all forms of normal and pathological red and white blood cells. In this course students are given specimens of blood from cases of pernicious anemia, myelogenous leukemia and lymphatic leukemia, for study.

(c) Stomach contents; the macroscopical, chemical, and microscopical study of gastric contents in various diseases of the stomach, with special reference to differential diagnosis by lectures and demonstrations.

(d) Exudates and transudates in various diseases of the pleura and peritoneum.

During the fifth and sixth years laboratory facilities are provided so that students themselves, under the supervision and direction of one of the staff, examine material obtained from cases observed in clinics at the University Dispensary.

4. Autopsies

Associate Professor ROBERTSON, Assistant Professor BELL, Drs. JOHNSON and BARRON

Required in fifth and sixth years.

The fifth- and sixth-year classes are divided into sections similar to those for clinics. Such sections are called in rotation to each autopsy, where the students are required to take an actual part in the examinations under the direct supervision of the pathologist in charge. The work consists of a review of the clinical history, methods of section, study and description of gross specimens. Each student is required to attend at least two autopsies during each year. About 175 autopsies are performed in the department during each year.

5. General Bacteriology

Assistant Professor LARSON and Dr. MAGNUSSON

Third year, second semester.

Lectures and demonstrations. The general scope of bacteriology, the history of its development and the biological and chemical problems involved in the life history of bacteria are presented.

The classification of the various bacterial forms, the methods of isolation and culture, and the composition and preparation of culture media are studied until a thorough knowledge of technique is acquired. General and special study of the various antiseptics, disinfectants, and bactericidal substances and conditions is undertaken.

Laboratory work, involving the making of their own culture media by the students, the study of bacteria in cultures and under the microscope, technique of staining and other methods, including observations of chemical and biological peculiarities, is thoroughly covered. Testing of various germicides, chemical and physical, and the use of bacteriological methods in the examination of drinking water form an important part of the work. Bacterial activities concerned in sewage purification, etc., receive attention.

The above course has been adapted to the needs of those students in other schools of the University who may wish to obtain a knowledge of the principles of Bacteriology.

6. Special Bacteriology

Assistant Professor LARSON and ASSISTANTS

Fourth year, first quarter.

This course is a continuation of the study of general bacteriology and includes:

- (a) Detailed instruction in the characteristics of special pathogenic micro-organisms.
- (b) A consideration of the morphology and pathogenicity of the more important types of the higher bacteria.
- (c) Studies in the general principles of immunity and the practical applications of various serum reactions.

7. Pathological Diagnosis and Technique

Associate Professor ROBERTSON

Elective. Limited to ten students of the junior year.

Students participate in autopsies, and themselves prepare and examine material from autopsies and operations for final report and record. They thus are able to provide themselves with a set of selected permanent specimens and learn how to describe processes, write reports, and correlate and record results of value to the clinician. Students become familiar with the various physical, chemical, and staining methods used in modern pathology and gain a knowledge of the preparation of gross and microscopic specimens for demonstration, museum, class, and medical society work. Each reviews the literature of some one or more important pathological process.

8. Public Health Laboratory Technique

Elective.

This course allows the student to become thoroughly familiar with the technique ordinarily employed in a public health diagnostic laboratory. The routine examination of diphtheria and sputum and the Widal test receive considerable attention. In addition, the Pasteur treatment for rabies and the methods employed in the sanitary examination of water are demonstrated. Examinations made for other infectious diseases are also shown.

9. Advanced Bacteriological Technique and Special Problems

Elective.

This course affords the student an opportunity of studying bacteriological technique in greater detail than can be given in the required course. It deals with special methods of isolation of particular pathogenic species of bacteria, together with special means for their cultivation. It necessitates the bacteriological study of feces, urine, sputum, exudates, etc.

10. Immunity

Elective.

This course gives the student an introduction to the facts of immunity in a practical manner by the study of natural and acquired immunity. Students conduct experiments to show the different types of protective substances mentioned in the theories of immunity and become familiar with the principles and technique of the modern laboratory methods of serum diagnosis.

11. Research Work in one of the following lines

Second semester of fifth and throughout the sixth year, hours assigned.

- (a) General pathology and bacteriology.
- (b) Special pathology and bacteriology.

Text-Books.—*Pathology.*—Delafield and Prudden, Handbook of Pathological Anatomy and Histology; Adami, Inflammation; Adami, Principles of Pathology; American Text-Book of Pathology; Ziegler, General and Special Pathology; Cattell, Post-Mortem Pathology; Durck-Hektoen, Special Pathologic Histology; Mallory and Wright, Pathological Technique.

Bacteriology.—Jordan, General Bacteriology; Hiss and Zinsser, Text-Book of Bacteriology; Park and Williams, Pathogenic Micro-organisms.

Collateral Reading.—Aschoff, Pathologische Anatomie; Lubarsch-Ostertag, Ergebnisse der allg. Path. u. Path. Anat.; Orth, Pathologische Anatomie; Ribbert, Allg. Path. u. Path. Anat.; Ribbert, Geschwülstelehre; Osler, Modern Medicine; Allbutt, System of Medicine; Bouchard, Traité de Pathologie Générale; Braun, Animal Parasites of Man; Kolle-Wassermann, Handbuch der Path. Micro-organismen, etc.

HYGIENE

The very closest relations have always existed between the Minnesota State Board of Health and the University of Minnesota. Members of the State Board of Health staff have also been teachers in the University of Minnesota.

The main laboratories of the Minnesota State Board of Health, and the offices of the Epidemiologist are located in the Institute of Public Health and Pathology. Thus practical men are available as teachers; the practical sanitary work conducted affords the best illustrative teaching material. Members of the staffs of the municipal boards of health of Minneapolis and St. Paul are also on the teaching staff of this college, affording, in addition, illustrative material in municipal hygiene.

Members of the staffs of the Agricultural College, the School of Chemistry, the Department of Economics, the Department of Biology, the College of Education, and the Department of Sanitary Engineering of the University, are all employed in the teaching of medical students.

It is planned that other courses of instruction in relation to personal hygiene and public health will be given to all students of the University, and in addition to the special courses provided already for municipal and sanitary engineers, other courses will be available for the College of Education, School of Chemistry, and for such students as require a knowledge of special phases of public health.

A graduate course for medical health officers will be announced later.

For medical students, attempt is made to follow the outline prepared by the Committee on Hygiene, Medical Jurisprudence, and Medical Economics of the Council on Medical Education of the American Medical Association. The development of this course is facilitated by the relationships above mentioned and by the co-operation of the various other state institutions, boards, and associations. The School is indebted to the following for special instruction:

Professor FREDERIC BASS, Professor of Sanitary and Municipal Engineering, and Director of Engineering Division, Minnesota State Board of Health.

Dr. GEORGE W. BEACH, Superintendent, Minnesota State Sanatorium (for Tuberculosis), Walker, Minnesota

Dr. R. O. BEARD, Associate Professor of Physiology, Medical School, University of Minnesota

Dr. T. CLARK, Surgeon, U. S. Public Health Service

- CHRISTOPHER EASTON, Executive Secretary, The Minnesota Association for the Prevention and Relief of Tuberculosis, St. Paul, Minnesota
- Dr. THOMAS B. HARTZELL, Professor of Oral Surgery, College of Dentistry, University of Minnesota
- Dr. GEORGE D. HEAD, Associate Professor of Medicine, Medical School, University of Minnesota
- Dr. ERNEST BRYANT HOAG, Special Director of School Hygiene, Minnesota State Board of Health
- Professor C. W. HOWARD, Department of Agriculture, University of Minnesota
- Dr. W. J. MARCLEY, Late Superintendent, State Sanatorium (for Tuberculosis), Walker, Minnesota; Secretary, Tuberculosis Commission, Minnesota State Board of Health
- Dr. R. H. MULLIN, Director of Laboratory Division, Minnesota State Board of Health; Associate Professor of Public Health
- Dr. ALFRED OWRE, Dean of the College of Dentistry, University of Minnesota
- Dr. J. N. PIKE, College of Dentistry, University of Minnesota
- Dr. M. H. REYNOLDS, School of Agriculture, University of Minnesota
- Dr. H. E. ROBERTSON, Associate Professor of Pathology, University of Minnesota
- Dr. J. P. SEDGWICK, Department of Medicine, Medical School, University of Minnesota
- Dr. E. L. TUOHY, Duluth, Minnesota
- Professor F. L. WASHBURN, Department of Agriculture, University of Minnesota
- Dr. F. F. WESBROOK, formerly Dean, Professor and Director of Department of Pathology and Bacteriology, Medical School, University of Minnesota

DEPARTMENT OF MEDICINE

- CHARLES LYMAN GREENE, M.D., Professor of Medicine and Chief of the Department of Medicine
- ARTHUR S. HAMILTON, B.S., M.D., Associate Professor, in charge of the Division of Nervous and Mental Diseases
- JULIUS PARKER SEDGWICK, B.S., M.D., Associate Professor, in charge of the Division of Pediatrics
- GEORGE DOUGLAS HEAD, B.S., M.D., Associate Professor of Medicine
- S. MARX WHITE, B.S., M.D., Associate Professor of Medicine
- WALTER D. SHELDEN, B.S., M.D., Assistant Professor of Medicine
- JAMES S. GILFILLAN, M.D., Assistant Professor of Medicine
- WALTER R. RAMSEY, M.D., Assistant Professor of Pediatrics
- JOHN ELDON HYNES, M.D., Instructor in Medicine
- HENRY L. ULRICH, B.S., M.D., Instructor in Medicine
- ERNEST T. F. RICHARDS, M.D., Instructor in Medicine
- EDGAR J. HUENEKENS, B.A., M.D., Instructor in Medicine

ALEXANDER R. HALL, M.D., Instructor in Medicine
 FREDERIC W. SCHLUTZ, B.A., M.D., Instructor in Pediatrics
 ERNEST L. BAKER, M.D., Assistant in Medicine
 JOHN M. LAJOIE, M.B., Assistant in Medicine
 ALBERT E. JOHANN, B.A., M.D., Assistant in Pediatrics
 JAMES F. HAMMOND, M.D., C.M., Assistant in Pediatrics
 FREDERICK C. RODDA, M.D., Assistant in Pediatrics
 BRONSON CROTHERS, B.A., M.D., Assistant in Pediatrics
 ERNEST M. HAMMES, M.D., Assistant in Nervous and Mental Diseases
 ANGUS W. MORRISON, B.A., M.D., Assistant in Nervous and Mental Diseases

Departmental Office in Millard Hall

GENERAL MEDICINE

Fourth Year.—Instruction in Medicine begins in the second semester of the fourth year with courses in elementary physical diagnosis, case taking, and general symptomatology, occupying one hour daily in the fourth quarter.

This work includes lectures, quizzes, and bedside demonstrations.

Fifth Year.—During the fifth year the student receives systematic instruction by means of didactic lectures, recitations, and written quizzes, in the acute infections, the diseases of all the important organs of the chest and abdomen, the blood and ductless glands, the alimentary tract, and in constitutional diseases and intoxications.

These courses occupy six hours a week during the school year.

Sixth Year.—The courses in Medicine of the sixth year comprise instruction in diseases due to animal parasites, in tropical diseases, in life insurance examinations, and in case analysis.

Two hours weekly throughout the sixth year are devoted to these courses.

The sixth year's work in the classroom consists chiefly of the analysis of actual case histories by the members of the class, supplemented by explanatory remarks by the instructors and when possible by the presentation of patients and the demonstration of autopsy material.

Clinics.—In addition to the didactic courses previously outlined, the fifth- and sixth-year students are required to devote two entire days each week in attendance at clinics in the hospitals and free dispensaries of Minneapolis and St. Paul.

Sixth-year students are also assigned three days per week to the University Hospital for ward work and daily to the University Free Dispensary for practical instruction in case taking, physical diagnosis, etc.

Small sections of sixth-year students may be assigned for given periods of time to make the general hospital rounds with the Chief of Staff. Such

general rounds require the attendance of all staff physicians on duty, as well as the laboratory representatives, and offer unusual opportunities to the student.

Tests and Practical Examinations.—At the end of each of the courses of the fourth, fifth and sixth years, test examinations are held and practical clinical examinations are required frequently during the fifth and sixth years, these being supplemented by general written examinations at the end of each year.

Clinical Laboratory Work.—Medical pathology, including systematic application of laboratory methods to diagnostics, is taught in the pathological laboratory during the second semester of the fourth year, and laboratory teachers co-operate with the teaching staff in the lecture room, the University Hospitals and Dispensary, and the City Hospitals of Minneapolis and St. Paul.

Sixth-year students are assigned daily in small sections to the clinical laboratories of the University Hospitals where examinations of urine, blood, sputum, and stomach contents are made under competent instructors.

Every effort is made to present the available clinical material in such a manner that the student shall be brought into actual contact with the cases studied, ascertain for himself both clinical and laboratory data, and thus work out the diagnostic features of each case by logical and systematic methods of study. Furthermore, the student is constantly drilled in case taking, physical diagnosis, the use of diagnostic instruments of precision, and applied clinical pathology at the bedside.

In neurology and psychiatry, clinics are given in Minneapolis at the University Hospital, the City Hospital, and at the University Free Dispensary; and in St. Paul, at the City and County Hospital.

Instruction in pediatrics is wholly clinical after the fifth year, and an abundance of material is found in the Twin City Hospitals and Dispensaries.

1. Elementary Physical Diagnosis

Three lectures and recitations per week, six weeks; fourth year, fourth quarter.

2. Case Taking and General Symptomatology

Three lectures and recitations per week, six weeks; fourth year, fourth quarter.

3. Diseases of Heart and Blood Vessels

Two lectures and recitations per week; fifth year, first quarter.

4. Diseases of the Bronchi, Lungs, and Pleura

Two lectures and recitations per week; fifth year, first quarter.

5. Gastric Ailments

Two lectures and recitations per week; fifth year, second quarter.

6. Diseases of the Kidney

One lecture and recitation per week; fifth year, second quarter.

7. Acute Infectious Diseases

One lecture and recitation per week; fifth year, second, third, and fourth quarters.

8. Diseases of the Intestinal Tract, Liver, Pancreas, Spleen, and Peritoneum

Two lectures and recitations per week; fifth year, third quarter.

9. Diseases of the Blood and Ductless Glands

One lecture and recitation per week; fifth year, third quarter.

10. Diseases of Children

Two lectures and recitations per week; fifth year, third and fourth quarters.

11. Systematic Quizzes Reviewing the Work of the Year

Fifth year, throughout.

12. Case Analysis

Two exercises per week; sixth year, throughout.

The classroom work of the sixth year in Medicine consists principally of case analysis (using actual case histories), with short explanatory talks by the instructors, together with seminar work, etc.

13. Constitutional Diseases and the Intoxications

One lecture and recitation per week; fifth year, third quarter.

14. Tropical Diseases and Diseases Due to Certain Animal Parasites

One lecture and recitation per week; sixth year, fourth quarter.

15. The Examination for Life Insurance

One lecture and recitation per week; sixth year, third quarter.

16. Neurology and Neurologic Diagnosis

Two hours per week; lectures, recitations, and demonstrations; sixth year, first semester.

17. Psychiatry

Two hours per week; lectures, recitations, and demonstrations; sixth year, third quarter.

18. Clinical Neurology and Psychiatry

Four hours per week; sixth year, first and second semesters.

19. Clinical Course in the Diseases of Children

Four hours per week; fifth and sixth years; at Minneapolis City Hospital, Children's Home, other hospitals, and the University Free Dispensary.

20. Clinical Course in the Diseases of Children

Four hours per week; fifth and sixth years; at St. Paul City and County Hospital, and St. Paul Free Dispensary.

21. Medical Pathology

Combined laboratory and bedside course under the Departments of Medicine and Pathology. (See Course 4 under Department of Pathology and Bacteriology.)

22. Physical Diagnosis

In addition to the systematic instruction given under Course 1, the topic is further developed and applied in the University Hospitals and Dispensary, the public hospitals of the Twin Cities, and in special clinical lectures and section clinics.

The classroom courses dealing with diseases of the thorax and abdomen, further emphasize and apply the various methods of diagnosis, whether physical, instrumental, chemical, or microscopic.

23. General Medical Clinics

(a) Senior students, regularly assigned in sections for a definite period to act as clinical clerks, visit the University Hospitals daily, take case histories and follow closely and report upon the individual patients to whom they are specifically assigned.

(b) Section clinics are held daily in the University Hospitals and University Dispensary.

(c) Section clinics and occasional clinical lectures occupy the entire afternoon and part of the forenoon on each Thursday and Saturday throughout the entire fifth and sixth years.

(d) Special tuberculosis clinics are held at the special tuberculosis out-patient clinics and in the Thomas Hospital.

Text-Books.—Greene, Medical Diagnosis; Butler, Diagnosis; Cabot, Physical Diagnosis; Da Costa, Physical Diagnosis; Wilson, Medical Diagnosis; Musser, Medical Diagnosis; Hare, Diagnosis; Leube, Special Medical Diagnosis; Osler, Practice; Edwards, Practice of Medicine; French, Practice of Medicine; Tyson, Practice of Medicine; Mering, Lehrbuch der Innere Medizin; Anders, Practice of Medicine.

Reference Books.—Osler, Modern Medicine; Allbutt, System; Ebstein und Schwalbe Handbuch; Gibson, Practice of Medicine; Mackenzie on the Heart; Babcock on the Heart; Gibson on the Heart and Aorta; Boas on the Stomach and Intestines; Zweig, Magen und Darmkrankheiten; Bourget, Die Krankheiten des Magens; Greene, Examination for Life Insurance; Cornet; Eichhorst; Manson, Tropical Diseases; Ker, Infectious Diseases.

Therapeutics.—Forchheimer, Prophylaxis and Treatment; Croftan, Clinical Therapeutics; Ortnier, Treatment of Internal Diseases; Yeo, Manual of Treatment; Hutchinson and Collier, Index of Treatment; Wilcox, the Treatment of Disease; Hare, Practical Therapeutics; Eichhorst, Spezielle Pathologie und Therapie.

Neurology and Psychiatry.—Oppenheim, Diseases of the Nervous System; White, Outlines of Psychiatry.

Diseases of Children.—Holt, Diseases of Children; Koplik, Diseases of Infancy and Childhood; American Text-Book of Diseases of Children; Keating, Cyclopaedia of Diseases of Children; Corlett, Acute Infectious Exanthemata; Grulee, Infant Feeding; Stengel, Nothnagel's Encyclopedia.

Medical Pathology.—Webster, Diagnostic Methods; Wood, Chemical and Microscopical Diagnosis; Sahli, Diagnostic Methods; Simon, Clinical Diagnosis; Hutchinson and Rainey, Methods; Emerson, Clinical Diagnosis; Nichol, Clinical Laboratory Methods; Boston, Clinical Diagnosis; Schleip, Atlas of Hematology; Cabot, Clinical Examination of the Blood; Da Costa, Clinical Hermatology; Ewing, Pathology of the Blood; Dickson, The Bone Marrow; Ogden, Clinical Examination of the Urine; Braun, Animal Parasites of Man.

DEPARTMENT OF SURGERY

JAMES E. MOORE, M.D., Professor of Surgery and Chief of the Department of Surgery

FRANK C. TODD, M.D., Professor, in charge of the Division of Eye, Ear, Nose, and Throat Diseases

ARTHUR J. GILLETTE, M.D., Professor, in charge of the Division of Orthopedics

J. FRANK CORBETT, M.D., Associate Professor of Experimental Surgery

ARCHIBALD MACLAREN, B.S., M.D., Associate Professor of Surgery

ARTHUR A. LAW, M.D., Associate Professor of Surgery

J. CLARK STEWART, B.S., M.D., Associate Professor of Surgery

WILLIAM R. MURRAY, Ph.B., M.D., Associate Professor of Diseases of the Eye, Ear, Nose, and Throat

ARTHUR T. MANN, B.S., M.D., Assistant Professor of Surgery

JOHN T. ROGERS, M.D., Assistant Professor of Surgery

WARREN A. DENNIS, B.L., M.D., Assistant Professor of Surgery

HARRY P. RITCHIE, Ph.B., M.D., Assistant Professor of Surgery

JOHN S. MACNIE, B.A., M.D., Assistant Professor of Diseases of the Eye, Ear, Nose, and Throat

FRANK E. BURCH, M.D., Assistant Professor of Diseases of the Eye, Ear, Nose, and Throat

FRANKLIN R. WRIGHT, M.D., Assistant Professor of Genito-urinary Diseases

SAMUEL E. SWEITZER, M.D., Assistant Professor of Dermatology

ARTHUR C. STRACHAUER, M.D., Instructor in Surgery

EARLE R. HARE, B.A., M.D., Instructor in Surgery

FREDERICK H. POPPE, B.A., M.D., Instructor in Surgery

EMIL S. GEIST, M.D., Instructor in Orthopedics

OSCAR OWRE, M.D., C.M., Instructor in Genito-urinary Diseases

JOHN BUTLER, M.D., Instructor in Dermatology

HARRY G. IRVINE, M.D., Instructor in Dermatology

CHARLES D. FREEMAN, M.D., Instructor in Dermatology and Genito-urinary Diseases

ELMER H. PARKER, B.S., M.D., Instructor in Diseases of the Eye, Ear, Nose, and Throat

PAUL F. BROWN, B.A., M.D., Assistant in Surgery

HARVEY B. ZIMMERMANN, M.D., Assistant in Surgery

JOHN S. ABBOTT, B.S., M.D., Assistant in Surgery

HENRY C. STUHR, M.D., Assistant in Surgery

A. G. WETHALL, B.S., M.D., Assistant in Genito-urinary Diseases

W. J. KREMER, B.S., M.D., Assistant in Genito-urinary Diseases

C. A. BOREEN, B.S., M.D., Assistant in Dermatology

CHARLES A. REED, B.S., M.D., Assistant in Orthopedics

CARL C. CHATTERTON, M.D., Assistant in Orthopedics

RAE T. LAVAKE, M.D., Assistant in Orthopedics

HORACE NEWHART, M.D., Assistant in Diseases of the Eye, Ear, Nose, and Throat

FRED J. PRATT, M.D., Assistant in Diseases of the Eye, Ear, Nose, and Throat

HARRY E. CANFIELD, M.D., Assistant in Diseases of the Eye, Ear, Nose, and Throat

STANLEY E. KERRICK, M.D., Assistant in Diseases of the Eye, Ear, Nose, and Throat

Departmental Office in Millard Hall

The course in Surgery is graded in the fifth and sixth years. Examinations are held at the close of each of these years. Lectures and recitations are given by the teaching staff in surgery and clinics at the dispensaries and hospitals of Minneapolis and St. Paul by a large corps of instructors.

1. Surgical Pathology Associate Professor CORBETT
Seven hours per week; fifth year, second quarter.

A demonstration laboratory course covering the subject of surgical inflammations. Abnormal conditions are demonstrated by gross and microscopic preparations and from experimental sources, and where possible by similar lesions on the living subject. (See also Course 6 under Pathology and Bacteriology.)

2. Principles of Surgery Associate Professor STEWART
Two lectures per week; fifth year, first semester.

Systematic discussion of the diseases and injuries of the bones and joints (except fractures and dislocations); injuries and diseases of the skin, lymphatics, blood vessels (including aneurism), and nerves; of the tendons, fasciae, and bursae. Lectures will be illustrated by lantern slides and demonstration of gross specimens.

Surgical Quiz (one hour per week) Dr. HARE

3. Surgical Technique Assistant Professor MANN
One hour a week, fifth year, first semester.

Lectures upon the principles of operative procedure; the preparation of patient, operator, and operating rooms; the principles of asepsis, antisepsis, and sterilization; ligatures and sutures; and the treatment of wounds.

4. Practice of Surgery Professor MOORE
Two lectures and recitations per week; fifth year, second semester.

Regional surgery; fractures and dislocations.

Surgical Quiz (one hour a week) Dr. HARE

5. Practice of Surgery Professor MOORE
Lectures and recitations, two hours per week; sixth year, first semester.

Surgery of the head, neck, chest, back, breast, abdomen, including hernia, anus, rectum, and urinary tract.

Surgical Quiz (one hour per week) Assistant Professor RITCHIE

6. Operative Surgery Assistant Professor MANN
Four laboratory hours per week; fifth year, third quarter.

Practical exercises on the cadaver illustrative of the courses in surgery.

7. Dermatology and Venereal Diseases Assistant Professor SWEITZER
Two lectures or recitations per week; one quarter, sixth year.
8. Genito-urinary Diseases Assistant Professor WRIGHT
One hour a week, first semester, sixth year.
9. Clinical Lectures on Dermatology, Genito-urinary and Venereal Diseases Assistant Professors WRIGHT and SWEITZER
Weekly at Minneapolis and St. Paul City Hospitals and daily at the University Clinical Building and St. Paul Dispensary; sixth year.
10. Tumors Associate Professors STEWART and CORBETT
Two lectures and demonstrations per week; sixth year, second semester.

The course on tumors is comprehensive, including a complete systematic laboratory course on tumor histology by Associate Professor Corbett and regional tumor surgery with lantern slide demonstrations by Associate Professor Stewart. The general subject of tumors, their life history, classification, pathogenesis, diagnosis, and treatment, is taken up by lectures.

Regional surgery of tumors is also considered fully and is copiously illustrated by lantern slides.

Quiz (one hour per week)

Dr. HARE

11. Laboratory Course on Tumors Associate Professor CORBETT
Two hours per week; fifth year, second semester.
Each variety of tumor is taken up and studied. Students are given sections illustrating same. With this microscopic study is combined recitations and demonstrations of gross tumors with histories, photographs, and lantern slides. (See also Course 7 under Department of Pathology and Bacteriology.)

12. Clinical Surgery

Courses of clinics at which operations in the whole domain of surgery are witnessed by the students of the fifth and sixth years. These clinics are held in the University Hospitals and Out-Patient Department, in the City and County Hospital of St. Paul, and the City Hospital of Minneapolis upon Thursdays and Saturdays throughout the year. The classes alternate at the two cities in their attendance upon these clinics. They are conducted personally, throughout the year, by the clinical chiefs and their associates as follows.

Surgical clinics will be held every Thursday and Saturday by Professor Moore and his assistants. Bedside clinics will be given throughout the week by various members of the staff.

A junior diagnostic quiz will be held by Professor Moore one hour a week, throughout the year. The object of this clinic is to bring the junior students in closer contact with the patients, teach them diagnosis, and thus enable them to appreciate the operative clinic.

13. Experimental Surgery Associate Professor CORBETT
Throughout the year courses in experimental surgery will be given by Associate Professor Corbett, in the rooms in Millard Hall provided for that purpose. The work will always be accessible to graduates and

to select members of the senior class. Any senior student or graduate having a surgical problem that he wishes to work out experimentally, will be given the facilities to do the work under the guidance of Associate Professor Corbett.

Text-Books.—Rose and Carless, Surgery; Keen, Surgery; Binnie, Operative Surgery; Scudder on Fractures; Stimson on Fractures and Dislocations; Skirving, McLachlan's Applied Anatomy; Campbell, Surgical Anatomy.

Dermatology, Genito-urinary and Venereal Diseases.—Key or White and Martin, Diseases of Urinary Organs; Lydston, Genito-urinary, Venereal, and Sexual Diseases; Hyde, Diseases of the Skin; Walker, Dermatology; Jackson, Diseases of the Skin; Hyde and Montgomery, Venereal Diseases; Crocker, Diseases of Skin; Morris, Diseases of the Skin; Hayden, Diseases of the Skin; Stelwagon, Diseases of the Skin; Taylor, Genito-Urinary and Venereal Diseases of the Skin.

DIVISION OF ORTHOPEDICS

Orthopedic Surgery

Professor GILLETTE

Two lectures and recitations per week; sixth year, fourth quarter.

This includes diseases of bones, joints, synoviae, and bursae, congenital and acquired deformities; dystrophies, with the principles of treatment.

Text-Book.—Bradford and Lovett, Orthopedic Surgery.

DIVISION OF DISEASES OF THE EYE, EAR, NOSE, AND THROAT

The student during the first two years receives instruction in the anatomy and physiology of these organs. The regular courses upon diseases of the eye, ear, nose, and throat are given during the senior year, but a certain amount of clinical work is provided during the fifth year.

The required work consists of a course of lectures and recitations and of dispensary and hospital clinics given in Minneapolis and St. Paul by a competent corps of instructors. Students are taught the technique of examination and treatment of the common and important diseases. An elective course is also furnished in ophthalmoscopy, and in refraction

1. Diseases of the Eye and its Appendages Professor TODD
Lectures (two hours a week); sixth year, first semester.
2. Diseases of the Ear Professor TODD
Lectures (nine hours); sixth year, first semester.
3. Diseases of the Nose and Throat Associate Professor MURRAY
Lectures and recitations (two hours a week); sixth year, second quarter.
4. Clinical lectures on eye, ear, nose, and throat operations, University Hospital, twice weekly Professor TODD
5. Clinical lectures on nose and throat diseases, given at City Hospital, Minneapolis, every Saturday. Sections of senior and junior classes. Associate Professor MURRAY

6. Clinical lectures and operations, City and County Hospital, St. Paul, weekly
Assistant Professor BURCH
7. Clinical instruction will be given at the University and St. Paul Free Dispensaries in the diagnosis of diseases of the eye and ear; in methods of examination, in the use of instruments, including the ophthalmoscope, and in the treatment of eye and ear diseases, etc. Small sections daily. Sixth year.
Associate Professor MURRAY, Assistant Professor MACNIE, Drs. NEWHART and PRATT
8. Clinical instruction will be given at the University and St. Paul Free Dispensary in the diagnosis of nose and throat diseases, in methods of examination, use of instruments, and treatment. Small sections daily.
Associate Professor MURRAY and Dr. PARKER
9. Ophthalmoscopy
Assistant Professor MACNIE
A practical course of instruction. Technique of ophthalmoscopy with illustrations on models and patients, normal and abnormal cases, demonstrating diseases of the interior of the eye. This course elective in the senior year.
10. Intubation
Dr. PARKER
An elective course in intubation, illustrated by work on the cadaver, will be given to sixth-year students. Class limited to six students.
11. Refraction
Dr. CANFIELD
Elective for seniors.

Text-Books.—Reik, Diseases, Ear Nose, and Throat; Wood and Woodruff, Commoner Diseases of the Eye; De Schweinitz, Diseases of the Eye; May, Diseases of the Eye; Coakley, Diseases of the Nose and Throat; Kyle, Diseases of the Nose and Throat.

Collateral Reading.—Ballenger, Diseases of Ear, Nose, and Throat; Weeks, Diseases of Eye; Fucho, Diseases of Eye.

DEPARTMENT OF OBSTETRICS

JENNINGS C. LITZENBERG, B.S., M.D., Professor of Obstetrics and Chief of Department

ABRAHAM B. CATES, M.A., M.D., Associate Professor of Obstetrics

FREDERICK LEAVITT, M.D., Assistant Professor of Obstetrics

FRED L. ADAIR, B.S., M.D., Assistant Professor of Obstetrics

JOHN L. ROTHROCK, M.A., M.D., Assistant Professor of Gynecology

IVER SIVERTSEN, M.D., Instructor in Gynecology

CHARLES L. RODGERS, M.D., Assistant in Obstetrics

S. J. ASPELUND, M.D., Assistant in Gynecology

Departmental Office in Institute of Anatomy

OBSTETRICS

The course in Obstetrics is graded in the junior and senior years. Besides the regular didactic lectures given to students throughout their junior year by Associate Professor Cates, the entire subject of Obstetrics is reviewed by quiz in the senior year by Professor Litzenberg and Assistant Professor Leavitt. A laboratory course in obstetric pathology will be given to seniors by Assistant Professor Adair.

The opportunity of studying the subject clinically is ample. The public hospitals of both cities allow free use of many hundreds of patients, for the study and observation of women before, during, and after labor. The establishment of a maternity ward in the University Hospitals has greatly enlarged the facilities in this field. An out-patient department in each city, which permits of experiences from a different standpoint, also furnishes an abundance of material.

Participation in the conduct of at least six deliveries during the senior year is required of each candidate for a degree. Proof of such work will be the filling out of certain history sheets, and filing the same with the chairman of this department, no single case being reported by more than five students, preferably by one or two.

1. Theory and Practice of Obstetrics Associate Professor CATES

Lectures to juniors during the year, and recitations.

Maternal pelvic anatomy; physiology of pregnancy; pathology of pregnancy; diagnosis of pregnancy.

Abortion and premature labor; physiology and clinical history of labor; mechanism and management of labor; puerperium and care of the new-born infant; post-partum hemorrhage.

Abnormal positions and presentations of the fetus; forceps; version; eclampsia; placenta previa; extra-uterine pregnancy; puerperal septicaemia; pelvic deformities; obstetric surgery.

2. Recitations and Case Analysis by seniors

Professor LITZENBERG and Assistant Professor LEAVITT

3. Clinical Obstetrics

Professor LITZENBERG and ASSISTANTS at the University Hospital; Assistant Professors ROTHROCK and LEAVITT at the St. Paul City and County Hospital; and Assistant Professor ADAIR at the City Hospital and Out-patient Department.

4. Hospital Ward Work

Professor LITZENBERG, Assistant Professors LEAVITT and ADAIR

Weekly clinics throughout the year will be given to members of the senior and junior classes. Students will be taken in small sections through the maternity ward, where opportunity is afforded for the antepartum examination of the pregnant woman, the observation of the puerperium with its management, and the study of the ailments and the care of the new-born infant.

GYNECOLOGY

The course in gynecology consists of lectures, recitations, demonstrations, and clinical instruction.

1. Lectures and Recitations Professor LITZENBERG
Fifth year, second quarter.

In this course the essentials of the subject of gynecology are reviewed by quiz and lecture.

2. Principles of Gynecology

Professor LITZENBERG, Assistant Professors LEAVITT and ADAIR

Two hours per week, sixth year.

Infections, inflammations, and allied disorders of the genital tract.

Including tumors of the external genitals, vagina, uterus and adnexa.

Including tubal pregnancy and malformations, traumatisms and displacements of the uterus and other pelvic organs, disorders of menstruation, and sterility.

3. Clinical Gynecology

Weekly clinics in the City and County Hospital of St. Paul by Assistant Professor ROTHROCK. Every operation in this subject is presented in these clinics.

4. Dispensary Clinics Assistant Professor ADAIR and Dr. SIVERTSEN

This course consists of examinations of gynecologic and obstetric cases. Each student examines a large number of women and receives instruction in methods of diagnosis and treatment.

THE HISTORY OF MEDICINE AND MEDICAL ETHICS

Two hours a week; sixth year, fourth quarter.

An elective course of lectures is given on the history of medicine and of the medical profession from the earliest times, including accounts of the epoch-making discoveries in medicine, brief sketches of the lives of eminent physicians, and an account of the great plagues in history. One lecture in this course is devoted to medical ethics, medical economics, and the relations of physicians to each other and to the community.

MEDICAL JURISPRUDENCE

Two hours a week; sixth year, fourth quarter.

A course of lectures and recitations in the legal relations of medicine.

Text-Books.—Taylor, Medical Jurisprudence.

Collateral Reading.—Withaus, Principles of Forensic Medicine and Toxicology; Wharton and Stille, Medical Jurisprudence; Reese, Medical Jurisprudence and Toxicology; Draper, Medical Jurisprudence.

STUDENTS

GRADUATE STUDENTS—13

W. F. Baillie, Hunter, N. D.
 M.D., '03, University of Minnesota
 Theodore Bratrud, Warren
 M.D., '99, University of Minnesota
 Sam Chernausek, Dickinson, N. D.
 M.D., '10, University of Pennsylvania
 Jesse E. Douglass, St. Paul
 M.D., '12, University of Minnesota
 Rowland Gilmore, Bemidji
 M.D., '95, Trinity Medical College,
 Toronto
 Ellen Marie Johnson, Minneapolis
 M.D., '09, College of Physicians and
 Surgeons, Chicago

Robert B. Lees, White, S. D.
 M.D., '01, University of Minnesota
 Eric P. Quain, Bismarck, N. D.
 M.D., '98, University of Minnesota
 John C. Staley, St. Paul
 M.D., '03, University of Minnesota
 Arthur C. Strachauer, Minneapolis
 M.D., '08, University of Minnesota
 Dennis W. Sullivan, Frankfort, S. D.
 M.D., '11, Ensworth Medical College
 E. C. Taylor, St. Paul
 M.D., '01, University of Pennsylvania

SHEVLIN FELLOW IN MEDICINE

John, Henry J., Minneapolis
 B.A., '11, University of Kansas

SIXTH YEAR—46

Babcock, Fager M., Minneapolis
 B.A., '09, University of Minnesota
 Badeaux, George I., Brainerd
 B.S., '11, University of Minnesota
 Bailey, Herbert B., Jackson
 Berge, Parker L., Jackson
 Bonness, Hazel, Minneapolis
 B.S., '11, University of Minnesota
 Bratrud, O. Edward, Warren
 B.S., '11, University of Minnesota
 Brodie, Walter D., St. Paul
 B.S., '11, University of Minnesota
 Cabot, Verne S., Minneapolis
 Cornica, Albert D., Plato
 Davis, Thayer C., Akeley
 B.S., '11, University of Minnesota
 Dorge, Richard I., Minneapolis
 B.S., '11, University of Minnesota
 Engberg, Edward J., Cambridge
 Evert, John A., St. Paul
 B.S., '10, Macalester College
 Finley, William F., Ferryville, Wis.
 B.S., '11, University of Minnesota
 Freligh, Wilfred P., Stillwater
 B.A., '11, University of Minnesota
 Giessler, Paul W., Minneapolis
 Hall, Joseph M., Minneapolis
 B.S., '11, University of Minnesota
 Hawke, Charles C., Pueblo, Colo.
 B.A., '07, University of Denver

Hayes, Edward W., Millville
 B.S., Carleton College
 Howe, Archibald W., St. Paul
 B.S., '11, University of Minnesota
 Josewitch, Alexander, Minneapolis
 B.S., '11, University of Minnesota
 Kucera, William J., Hutchinson
 B.S., '11, University of Minnesota
 Love, Fred A., Preston
 Mariette, Ernest S., Minneapolis
 B.S., '11, University of Minnesota
 Meland, Orville N., Pelican Rapids
 Michael, Joseph C., Jordan
 Moersch, Frederick P., St. Paul
 B.S., '11, University of Minnesota
 Nesse, S. Arthur, Mabel
 B.S., '11, University of Minnesota
 Noonan, Daniel F., Minneapolis
 Nordland, Martin, Minneapolis
 B.S., '11, University of Minnesota
 Nuessle, Walter G., Springfield
 B.S., '11, University of Minnesota
 Pearsall, Phebe L., Port Byron, Ill.
 B.S., '04, Beloit College
 Phelps, Kenneth A., Fargo, N. D.
 Quinnell, Earle D., Neche, N. D.
 B.S., '11, University of Minnesota
 Robilliard, Charles M., Faribault
 B.S., '11, University of Minnesota
 Roddis, Louis H., Long Prairie

Rosenwald, Reuben M., Plato
 Rydell, Charles B., North Branch
 B.S., '11, University of Minnesota
 Sargeant, Arthur P., Northfield
 Sholaas, Amalie S., Minneapolis
 B.S., '11, University of Minnesota
 Snell, Charles F., Detroit
 B.S., '11, University of Minnesota

Warwick, M. Margaret, Minneapolis
 B.S., '11, University of Minnesota
 Wentworth, Albert J., Minneapolis
 B.S., '11, University of Minnesota
 Wippermann, Paul F. W., Warrenton, Mo.
 Ph.B., '08, Central Wesleyan College
 Wohlrabe, Arthur A., Truman
 Woltmann, Henry W., St. Paul
 B.S., '11, University of Minnesota

FIFTH YEAR—34

Aldworth, Harold R., Minneapolis
 Anderson, N. Philip, St. Paul
 B.S., '12, University of Minnesota
 †Bell, Leo P., Monroe City, Mo.
 B.A., '12, University of Missouri
 †Camp, Walter E., Springfield, Mo.
 M.A., '12, University of Missouri
 Conley, Alva A., Cannon Falls
 B.S., '12, University of Minnesota
 Craven, Lawrence L., St. Paul
 Day, Herbert J., Sioux Falls, S. D.
 B.A., '12, University of Missouri
 Engh, Sigfred, Black River Falls, Wis.
 B.S., '09, St. Olaf's College
 Field, Louis M., Forest City, Ia.
 B.A., '07, Cornell College
 Frisch, Frank P., St. James
 B.S., '10, University of Minnesota
 Ghostley, George F., International Falls
 B.S., '12, University of Minnesota
 Hartig, Hugo J. A. J., Minneapolis
 B.S., '12, University of Minnesota
 Hendrickson, Gilbert, Christine, N. D.
 B.S., '12, University of Minnesota
 Hermansen, Hermina, Fergus Falls
 B.S., '12, University of Minnesota
 King, Zerah P., Minneapolis
 Kvitrud, Gilbert, Minneapolis
 B.S., '12, University of Minnesota
 Woodward, Floyd O., Minneapolis
 B.S., '12, University of Minnesota

Leavenworth, Richard O., Minneapolis
 B.S., '12, University of Minnesota
 Morell, Clifford F., Verndale
 B.S., '12, University of Minnesota
 Moses, Joseph, Jr., Northfield
 Myers, Thomas, St. Paul
 B.S., '12, University of Minnesota
 Nye, Katherine A., Minneapolis
 B.S., '12, University of Minnesota
 Oftedal, Axel, Minneapolis
 B.A., '11, University of N. D.
 O'Hare, Edward S., Minneapolis
 Pennie, Daniel F., Villard
 B.S., '08, Carleton College
 Reynolds, Hugh W., Chatfield
 Sohlberg, Olof I. A., St. Paul
 B.S., '12, University of Minnesota
 Soloway, Saul S., Minneapolis
 B.S., '12, University of Minnesota
 Stone, Harold W., Caldwell, Idaho
 B.S., '12, University of Minnesota
 Sutton, George E., Prior Lake
 Taylor, Kenneth, St. Paul
 B.A., '06, M.A., '07, University of
 Minnesota
 Traeger, Carl A., San Jose, Ill.
 Willius, Fredrick A., St. Paul
 B.S., '12, University of Minnesota
 Wold, Karl C., St. Paul

FOURTH YEAR—49

Bakke, Hans, St. James
 Borgman, Melville B., (Special), Minne-
 apolis
 *Borreson, Baldwin, Davenport, N. D.
 Carman, Paul I., St. Paul
 Clark, Harry B., St. Cloud
 *Coffin, Lela L., Minneapolis
 *Cook, Robert C., St. Paul
 Cooperman, Harold O., Minneapolis
 *Davis, Lloyd T., Akeley
 Edgar, James D., Minneapolis
 B.A., '11, University of Minnesota

Ellison, Edward O., Minot, N. D.
 B.A., '11, University of North Dakota
 Frise, Dudley C., Minneapolis
 Ph.C., '06, University of Minnesota
 *Ginsberg, William, St. Paul
 Greaves, J. Percy, Northfield
 *Green, Everett E., Le Sueur
 Halloran, Walter H., St. Paul
 Hamel, Arnold L., Crookston
 B.A., '10, Holy Cross College
 Hammermeister, Theodore F., Morgan
 *Hansen, Erling W., Minneapolis

†Registered only for part work.

*Students of combined seven-year course in Science and Medicine.

Hansen, Olga S., Bird Island
 *Hansen, Theodore L., Albert Lea
 *Haugen, Albert I., Elbow Lake
 *Holm, George A., Minneapolis
 †Hoskins, Elmer R., Minneapolis
 Jarvis, Bruce W., Davenport, Wash.
 B.S., '11, University of Washington
 †John, Henry J., Minneapolis
 *Johnson, Reuben A., Minneapolis
 King, William R., Chippewa Falls, Wis.
 *McFarland, Arthur H., St. Paul
 *McKeon, Joseph O., Montgomery
 *Mach, Frank B., New Prague
 Magney, Fredolph H., St. Peter
 *Mahoney, Daniel L., Virginia
 Mark, Arthur E., St. Paul
 Mitchell, Louis A., Newark, O.
 B.A., '11, University of Colorado
 *Murphy, Frank G., Mapleton, N.D.
 *Noice, Russell R., Minneapolis

Odland, Henry, Hurley, S. D.
 Oftedal, Trygve, Minneapolis
 O'Neill, John W., Eveleth
 B.S., '05, Notre Dame
 †Parkin, Guy G., Pine Island
 Payne, Roy A., Northfield
 B.A., '06, Carleton College
 Pettersen, Bernard, St. Paul
 B.A., '08, University of Minnesota
 Preston, Paul J., Luverne
 *Roskilly, Gerald C., Virginia
 Ruud, Henry O., Mahanomen
 Saari, John A., Minneapolis
 Schroeder, John H., Minneapolis
 Stock, Harry A., Minneapolis
 Stratte, Joseph J., Dawson
 Waugh, Richey L., Seattle, Wash.
 Ph.C., '08, University of Washington
 B.S., '09, University of Washington
 Williams, Clayton K., Minneapolis

THIRD YEAR—48

Armstrong, E. Leslie, Minneapolis
 Bank, Harry E., Minneapolis
 Bell, John W., Minneapolis
 Bill, Clayton D., Minneapolis
 Boquist, Eric T. W., Minneapolis
 Bottolfson, Bottolf T., Mahanomen
 Boutelle, Louisa E., Lake City
 B.A., '05, University of Minnesota
 Colberg, Hannah J., St. Peter
 Colman, Howard N., Seward, Neb.
 Dack, Lloyd G., Stanton,
 David, Solomon D., Damascus, Syria
 Dunn, James, Minneapolis
 Ebert, Michael H., St. Paul
 B.A., '07, University of Minnesota
 Eklund, William J., Duluth
 Fullerton, Lynne A., Olympia, Wash.
 Gallagher, Bernard J., Waseca
 Gates, Leo V., Elgin
 Gilroy, Earl W., Minneapolis
 Haskell, Abe, Minneapolis
 Haskins, John L., Minneapolis
 Hullsiek, Harold E., St. Paul
 Jones, Carl F., Sparta, Wis.
 King, Owen, Minneapolis
 Klima, William W., Silver Lake
 Klingen, Oscar M., Minneapolis

Lembke, Carl, Neche, N. D.
 Lepak, John A., Duluth
 Levin, Oscar S., Hoffman
 Lindall, Albin L., Parkers Prairie
 Luehrs, Leslie, Pipestone
 Morrison, Harold E., Minneapolis
 Noreen, Harold, Minneapolis
 Olson, Oscar B., St. Paul
 Paulson, Carl W., Minneapolis
 Peterson, Oliver H., Blue Earth
 Raadquist, Charles S., Warren
 Radabaugh, Rudolph C., Zumbro Falls
 Renshaw, Kinsley, Monona, Iowa
 Roberts, Lyle J., Omaha, Neb.
 Rowe, Paul H., Casselton, N. D.
 Selleseth, I. Ferdinand, Glenwood
 Shannon, W. Ray, Anoka
 Siedenbergh, Alfred H., Elk Mound, Wis.
 Siedenbergh, Arthur G., Elk Mound, Wis.
 Smith, Lee W., Wabasha
 Snodgrass, Thomas J., Minneapolis
 Stuhr, John W., Euclid
 Sutton, Harris R., Prior Lake
 Swanson, Roy E., Spokane, Wash.
 Thane, Ben, Metropolis, Ill.
 Villars, Horace S., Minneapolis
 Wingblade, Henry C., St. Paul

SEVEN-YEAR COURSE IN SCIENCE AND MEDICINE

SECOND YEAR—55

Agnew, Allen T., Vincennes, Ind.
 Anderson, Frank J., Ellsworth, Wis.

Annon, Walter T., Anoka
 Arnson, J. Martin, Eau Claire, Wis.

*Students of combined seven-year course in Science and Medicine. ●

†Registered in the Graduate School.

Armstrong, Victor S., Minneapolis	Mannheimer, Carl, St. Paul
Birkland, Olav N., Red Wing	Molander, Herbert A., St. Paul
Bregel, Fred L., Fairfax	Morgan, George T., Stillwater
Broker, Walter S., Minneapolis	Moriarty, Cecile R., St. Paul
Brown, Lyle L., Crookston	Nordin, Gustaf T., Minneapolis
Brown, Richard J. C., Minneapolis	Pearson, Fritz R., Hudson, Wis.
Buscher, Herbert, Lester Prairie	Pederson, Nellie C. E., Minneapolis
Byrnes, William A., Minneapolis	Powers, Orson B., St. Paul
Chisholm, Reginald, Chippewa Falls, Wis.	Proshek, Charles E., New Prague
De Moully, Oliver, Lake Crystal	Sansby, Joseph M., St. Paul
Doyle, John B., St. Paul	Schmidt, George J., Lake City
Freed, Oscar J. R., Watertown	Scholtes, Harry J., Wabasha
Geer, Everett K., St. Paul	Schutt, Ray L., Bremerton, Wash.
Groeber, Otto A., New Ulm	Shapiro, Morse J., Minneapolis
Herrmann, Edgar T., Minneapolis	Smersh, Jerome F., Owatonna
Hovde, Rolf, Duluth	Sneller, Charles D., Minneapolis
Iverson, Louis, Badger	Stamm, Gustave, St. Paul
Johnson, Arthur O., Minneapolis	Sund, Adolph G., Minneapolis
Kennicott, Robert H., Luverne	Swanson, Edwin, Brainerd
Larson, G. Arthur, Taunton	Sweetser, Theodore H., Minneapolis
Leavitt, John A., St. Paul	Tanner, Chester O., Fairmont
Little, Roy C., Madison	Tietz, Edwin R., St. Paul
Lowe, Thomas A., Hadley	Timm, John A., Utica
McKeon, George J., Montgomery	Vogtel, Melvin A., New Ulm
McKinley, J. Charnley, Minneapolis	Zeien, Maurice B., North Branch

FIRST YEAR—51

Barden, Norman, Minneapolis	Hoelzle, Francis F., Wimbledon, N. D.
Barton, John P., Minneapolis	Janes, Adeline M., Jordan
Borgeson, Egbert J., St. Paul	Jones, Dorothy, Duluth
Bostrom, Ernest F., Vasträ Erntervik, Sweden	Jones, John P., Minneapolis
Bullard, Luther, Waseca	Lang, Archie, Austin
Bush, Guy S., Minneapolis	Lenz, Dorsey S., Osakis
Casmev, Lewis N., Crookston	Lundquist, Elmer F., Minneapolis
Colby, Woodward L., Hector	McCusker, Joseph, Litchfield
Cole, Wyman C. C., Minneapolis	Mock, Francis H., Waconia
Conway, Frank T., Waseca	Nyberg, Merton, Minneapolis
Curry, Ray D., Minneapolis	Oswald, Blanche M., Minneapolis
Cuvellier, John H., Minneapolis	Reed, Frank W., Vinton, Iowa
Daniel, Donald, Minneapolis	Reed, Kenneth C., Vinton, Iowa
Denny, H. Royall, St. Paul	Rubberg, George N., Minneapolis
Fineman, Solomon, Minneapolis	Rumsch, Richard G., South St. Paul
Fjellman, Reuben C., Minneapolis	Runnerstrom, George E., Minneapolis
Fleischer, Clarence A., Duluth	Sahr, Walter C. G., Minneapolis
Geyer, Ruth, Mason City, Iowa	Schorn, Henry A., St. Paul
Haas, Aloys T., St. Paul	Schulman, Leo, Minneapolis
Halenbeck, Philip L., Duluth	Slater, Edward P., Anoka
Hall, W. Winthrop, Minneapolis	Stemper, Elmer F., Minneapolis
Hathaway, George J., Chetek, Wis.	Sturre, Julius R., St. Paul
Hawk, Charles L., Winterset, Iowa	Swendsen, Carl G., Minneapolis
Hedin, Leo, Sauk Center	Thomson, Willis I., Minneapolis
	Wahlquist, Harold F., Minneapolis
Yoerg, Harold H. S., Minneapolis	

SCHOOL FOR NURSES

GRADUATES

Ames, Margaret, Hutchinson
Burns, Elizabeth C., Graceville
Madsen, Christenia, Minneapolis
Mark, Mary E., St. Peter

Marvin, Mary M., Zumbrota
Schwarg, Carolyn, Dodge Center
Skonnord, Olga, Minneapolis
Stewart, Lena B., Minneapolis

THIRD YEAR

Angle, Maude F., Minneapolis
Cornish, Mary E., Vernon Center
Manger, Caroline, McIntosh

Ofsthun, Olive I., Glenwood
Thompson, Barbara, Glenwood
Waters, Vera, Beatrice, Neb.

SECOND YEAR

Babcock, Lana, Minneapolis
Greenwalt, Dorothy, Withrow

Lemstrom, Bera, Minneapolis
Lindquist, Signa, Minneapolis

FIRST YEAR

Anderson, Ruth E., Houston
Baudin, Jane E., West Duluth
Bertie, Mildred L., Minneapolis
Colberg, Ruth M., St. Paul
Fleming, Agnes, Minneapolis

Fredin, Gertrude V., Duluth
Hulett, Florence G., Minneapolis
Johnson, Alma D., Minneapolis
Nightingale, Margery M., Minneapolis
Thompson, Lena, Enderlin, N. D.

Winter, Clara L., Faribault

PRELIMINARY COURSE

Hollo, Myrtle M., Marshall

Landing, Olive, Glenwood
Selleseth, Ellen A., Glenwood

AFFILIATING

Ganstad, Ella, Red Wing
Haig, Katherine, Duluth
Larkin, Frances, Sparta, Wis.

Olson, Gudnie, Red Wing
Peterson, Emma, Red Wing
Weidiger, Emma, Red Wing

ALUMNI OF THE MEDICAL SCHOOL

INCLUDING YEAR 1911-12

- Abbott, Claude U., '04, Upton, Maine
 Abbott, William P., '06, Duluth
 Adams, Bertram S., '01, Hibbing
 B.S., '98, University of Minnesota
 Adams, Rollin T., '93, Mantorville
 B.S., Carleton College
 Agnew, Anna M., '99, City Board of Health
 Laboratory, New York
 *Ahlstrom, Alfred E., '00, St. Peter
 Aitkins, Herbert B., '93, Le Sueur Center
 B.A., Manitoba University
 Alexander, Frank H., '97, St. Paul
 Alexander, Ida Mary, '08, Clarissa
 B.A., '05, University of Minnesota
 Alger, Edmund W., '02, Minneapolis
 Allen, Charles C., Jr., '10, Austin
 B.S., '07, Carleton College
 Allen, Harry W., '00, Minneapolis
 B.S., '95, M.S., '97, University of
 Minnesota
 Allen, Mason, '97, St. Paul
 Alley, Albert G., '05, Granger, Wash.
 Amundsen, Albert E., '12, St. Paul
 Andersen, Arnt G., '04, Hillsboro, N. D.
 Anderson, August R., '91, Sioux City, Ia.
 Anderson, Carl A., '05, Hoopa, Cal.
 Anderson, Christopher A., '92, Rush City
 Anderson, Edwin C., '97, Missoula, Mont.
 Anderson, Francis W., V. S., '11, South
 Bend, Washington
 Anderson, Ludwig Wolmer, '04, Atwater,
 Wisconsin
 Anderson, Oscar H., '09, Plum City, Wis.
 Anderson, William S., '03, Warren
 Andrews, Roy Newberry, '08, Mankato
 Angell, William A., '95, Minneapolis
 Appleby, E. Villiers, '94, London, Eng.
 Arey, Hugh C., '02, Excelsior
 Argue, Geo. William, '01, Breckenridge
 Argue, Hiram S., '05, Tacoma, Wash.
 Armstrong, John M., '01, St. Paul
 Arneberg, John G., '05, Grand Forks, N. D.
 *Aronsohn, David M., '05, Glasgow, Mont.
 *Arslanides, Michael T., '94, Caesarea,
 Asia Minor
 B.A., Anatolia College
 Artz, Carl P., '95, St. Paul
 Artz, Philip G., '05, Jamestown, N. D.
 Ashley, E. Mayo, '06, Missoula, Mont.
 Ashley, Paul L., '06, Wibaux, Mont.
 Aspelund, Joseph S., '06, Minneapolis
 Aubin, Marie Louise (Mrs. W. E. Aubin),
 '93, Stillwater
 Aurand, William H., '01, Minneapolis
 Aurness, Peter A., '92, Minneapolis
 Austin, William J., '05, Spokane, Wash.
 Avery, Jacob Fowler, '99, Minneapolis
 Axilrod, David L., '03, Hutchinson
 Bacon, Harry P., '97, Milaca
 Bacon, Knox, '94, St. Paul
 Bailey, John Wm., '94, Seattle, Wash.
 Baillie, William F., '03, Hunter, N. D.
 *Baird, Mrs. Jas., (Petit, '94), Mpls.
 Baker, Ernest L., '09, Minneapolis
 Baker, Mary K., (Mrs. Dan. Baker) '00,
 Chicago, Ill.
 Baker, Willard R., '12, Minneapolis
 B.A., '08, Park College
 Bakke, Peter R., '92, Grantsburg, Wis.
 *Bakke, Peter H., '91, Kenyon
 Baldwin, Louis B., '97, Minneapolis
 Baldwin, Wm. P., '01, Casselton, N. D.
 Ball, Chas. R., '94, St. Paul
 B.A., Ohio Wesleyan
 Barclay, Alexander, Jr., '07, Cloquet
 Barnard, Elizabeth M., '12, Minneapolis
 Barney, Leon A., '09, Duluth
 B.S., '08, University of Minnesota
 Barre, William de la, '95, Minneapolis
 Barron, Moses, '11, Minneapolis
 B.S., '10, University of Minnesota
 Barsness, Nellie O., '02, St. Paul
 Bartron, Harry J., '06, Watertown, S. D.
 Bassett, Mary E., (Mrs. Chas. W. Bray),
 '95, Biwabik
 B.S., '93, University of Minnesota
 Batchelder, Edwin J., '93, New Richland
 Batcheller, Oliver T., '99, Brainerd
 Baxter, Stephen H., '02, Minneapolis
 B.A., '99, University of Minnesota
 Beaudoux, Henry A., '95, St. Paul
 Bebb, Rose A., '97, Rochester
 B.L., '91, University of Minnesota
 Beckman, Emil H., '01, Rochester
 B.A., '94, Grinnell
 Beebe, Dan G., '96, Zamboango, Minan-
 ao, Philippine Islands
 Beede, Ethel R., '09, Houston, Tex.
 B.A., '04, University of Minnesota
 Beek, R. Hudson, '94, Lakota, N. D.
 Belden, George G., '04, Spokane, Wash.
 Benedict, Earle E., '01, Minneapolis

*Deceased.

- Benham, Edward W., '95, Mankato
 Benjamin, Arthur E., '92, Minneapolis
 Bennett, Chas. E., '95, Aneta, N. D.
 Bennett, Oscar E., '00, Correll
 Bennion, Percival H., '02, St. Paul
 Benoit, Frank T., '05, Villard, Idaho
 Benson, Geo. E., '01, Minneapolis
 Benson, Oscar T., '05, Glen Ulin, N. D.
 Benson, Ross D., '12, Toledo, Ia.
 B.S., '07, Leander Clark College
 Benson, Theo. J., '04, Fromberg, Mont.
 Bergan, O. K., '91, Sacred Heart
 Bergan, Otto, '12, Spokane, Wash.
 B.S., '08, St. Olaf's College
 Bergh, L. M., '06, Montevideo
 Bernard, John A., '89, Minneapolis
 Berrisford, Paul D., '12, St. Paul
 Best, Robert, '99, Mankato
 Bevans, Theodore F., '03, Waterbury, Conn.
 Bickford, Frank J., '02, Centralia, Wash.
 Biedermann, Jacob, '04, Argyle
 B.S., '01, University of Minnesota
 Bigelow, Chas. E., '04, Madison Lake
 *Binder, Geo. A., '92, St. Paul
 Binger, Henry E., '10, Tulare, S. D.
 Bjornstad, Gisle, '94, Minneapolis
 Birdsall, Albert T., '96, Brooklyn, N. Y.
 B.L., '93, University of Minnesota
 Birnberg, Tobias, '04, Campbell
 Bissell, Frank S., '02, Minneapolis
 Bjelland, Adolph O., '96, Mankato
 Black, William, '09, Tyndall, S. D.
 B.A., '03, Wabash College
 Blackman, Ernest L., '01, Stockton, Cal.
 B.S., Coe College, Ia.
 *Blais, Chas. '04, Minneapolis
 Blake, James, '01, Hopkins
 Blakely, Clement C., '09, St. Peter
 Blanchard, H. G., '97, Waseca
 Blegen, Hallward M., '09, Wahpeton, N. D.
 B.A., '04, Augsburg
 Bloom, Charles J., '08, Mora
 B.A., '04, Carleton College
 Bock, Rolland, '08, St. Paul
 Ph.C., '01, University of Minnesota
 Bockmann, Michael W. H., '03, Minneapolis
 Boehm, John C., '93, St. Cloud
 Bohland, Fuchs F. J., '91, Belle Plaine
 Boleyn, E. Sidney, '94, Stillwater
 Bolkom, George W., '94, Minneapolis
 Bomberger, Franklin J., '02, Mapleton
 Booker, Gertrude (Granger, Mrs. G. W.)
 '97, Rochester
 *Borchardt, Edward A., '93, St. Paul
 Boreen, Clifton A., '09, Minneapolis
 B.S., '07, University of Minnesota
 Bostrom, August E., '08, De Smet, S. D.
 B.S., '06, University of Minnesota
 Bouman, Herman A., '97, Minneapolis
 Boyd, Leon Morelle, '08, Alexandria
 Boyum, Peter A., '07, Rushford
 Braasch, Wm. F., '03, Rochester
 B.S., '00, University of Minnesota
 Brabec, Frank J., '93, Perham
 B.S., '90, University of Minnesota
 Brand, William A., '04, Redwood Falls
 Brandt, Albert M., '05, Bismarck, N. D.
 Branton, Berton J., '05, Willmar
 Bratrud, Arthur F., '12, Warren
 Bratrud, Theo., '99, Warren
 B.A., '96, University of Minnesota
 Bray, Mrs. C. W., (Bassett, '95,) Biwabik
 B.S., '93, University of Minnesota
 Bray, Chas. W., '95, Biwabik
 B.A., '91, University of Minnesota
 Bray, E. R., '06, St. Paul
 B.A., '03, University of Minnesota
 Brede, Wm. G., '06, Minneapolis
 Phm.D., '98, University of Minnesota
 Brey, Frank, '10, Wabasso
 Brigham, Chas. F., '02, St. Cloud
 Brigham, Frank T., '05, Watkins
 Brimhall, Silas J., '02, Los Angeles, Cal.
 Brooks, Chas. N., '09, Minneapolis
 Brooks, George F., '00, Hibbing
 Brown, Charles E., '04, Highland, Kan.
 B.A.
 Brown, Harry, '96, Rolling Stone
 Brown, John C., '08, St. Paul
 B.A., '99, Leland Stanford University
 Brown, Paul F., '05, Minneapolis
 B.A., '02, University of Minnesota
 Brown, William G., '02, Park River, N. D.
 Brown, Walter M., '02, Naches, Wash.
 Brunelle, Adelarde M., '86, Cloquet
 Brush, Fred H., '05, N. Yakima, Wash.
 Bryant, Oliver R., '05, Minneapolis
 Buck, Carroll D., '97, Alcatraz, Cal.
 Buckley, Daniel, '98, Seattle, Wash.
 B.S., '95, University of Minnesota
 Buckley, John J., '09, Portland, Ore.
 Budworth, Benjamin F., '02, Shelly
 Buell, Mary C., '97, Cumberland, Md.
 Bulkley, N. C., '06, Eveleth
 Burch, Frank E., '97, St. Paul
 Burgan, James H., '99, Chicago, Ill.
 Burns, Catherine A., '87, Hopkins
 B.S., '79, University of Minnesota
 Burns, Herbert A., '08, Minneapolis
 Burns, M. Alpheus, '96, Milan
 Burns, Robert M., '05, St. Paul

- Bussen, L. H., '02, Richardton, N. D.
 Butler, David R., '94, Wilmot
 Butler, John, '03, Minneapolis
 Button, A. J., '06, Bowdle, S. D.
 Bye, Richard, '12, Lily, S. D.
 B.A., '08, St. Olaf's College
 Cahoon, Grace W., '97, Butte, Mont.
 Caine, Chas. E., '96, Morris
 Caldwell, James P., '09, Marble
 Caley, G. Ross, '00, Princeton
 Call, Alfred M., '03, Rugby, N. D.
 Callerstrom, G. W., '06, Northwood, N. D.
 B.A., '03, University of Minnesota
 Cameron, John A., '02, St. Paul
 Campbell, Albert A., '09, Ceylon, Wis.
 Campbell, Charlotte P., (Mrs. W. J.
 Pratt), '00, Gardner, N. D.
 Campbell, D. R., '05, Pullman, Wash.
 Campbell, George E., '95, Pasadena, Cal.
 Campbell, John E., '01, S. St. Paul
 B.S., '98, M.S., '99, University of Minn.
 Campbell, Lorne A., '04, Clear Lake,
 Wis.
 Campbell, Paul E., '03, St. Paul
 Campbell, Robert A., '96, Minneapolis
 Campbell, Robert W., '05, Swanville
 Canfield, Harry E., '06, Minneapolis
 Carlsen, E. L., '06, Tacoma, Wash.
 Carman, Chas. L., '97, St. Paul
 Carman, James E., '01, Detroit
 Carpenter, Carrol C., '97, Grand Rapids
 Carroll, William C., '12, St. Anthony Park
 B.S., '10, University of Minnesota
 Cassel, Rufus J., '01, Mt. Vernon, Wash.
 Castle, Karl H. E., '85, St. Paul
 Cater, Getta M., (Mrs. G. C. Sweeting),
 '01, Morton Park, Ill.
 Catlin, John J., '03, Buffalo
 Cavanaugh, Jas. O., '97, St. Paul
 Cavanor, Frank T., '10, Wheaton
 B.A., '03, University of Illinois
 Chamberlain, Henry W., '01, Bangor, Wis.
 Chambers, W. C., '05, Blue Earth
 B.S., '00, University of Minnesota
 Chapple, Chas. L., '98, Naches, Wash.
 B.S., '92, University of Minnesota
 Chase, E. Frank, '05, N. Yakima, Wash.
 Chase, Ralph R., '89, Eau Claire, Wis.
 Cheleen, Sigfried, '06, Minneapolis
 Chesley, Albert J., '07, Minneapolis
 Chilgren, G. Arthur, '92, Burlington, Ia.
 Chilton, Leo W., '04, Idaho Falls, Idaho
 Chowning, Wm. M., '01, Minneapolis
 B.A., Johns Hopkins
 Christenson, Chas. R., '96, Starbuck
 Christianson, Andrew, '10, St. Paul
 Christison, James T., '01, St. Paul
 M.D., Long Island, Col.
 Clark, Howard S., '97, Brooklyn, N. Y.
 B.S., '95, University of Minnesota
 *Clarke, Robert, '03, Plummer
 Claydon, Leonard E., '95, Red Wing
 Clement L. O., '02, Lamberton
 B.S., '99, University of Minnesota
 Cleveland, Hiram E., '01, Burlington,
 Washington
 Coffin, Samuel D., '04, Erie, N. D.
 Cohen, H. A., '01, Minneapolis
 Cole, Wallace, '10, St. Paul
 Coleman, Fred B., '09, Carlos
 Ph.B., Hamline University
 Coleman, Harry M., '97, Barron, Wis.
 Conant, Harriet B., '91, (Mrs. J. H. Mc-
 Cloud), Hardwick, Vt.
 Condit, Wm. H., '99, Minneapolis
 B.S., '95, University of Minnesota
 Cook, Paul B., '00, St. Paul
 Coon, William F., '03, Coury, Kan.
 Corbett, J. Frank, '96, Minneapolis
 Cosgrove, Joseph H., '06, Nashwauk
 Coria, Leon J., '04, Taft, Mont.
 Corse, Chas. A., '97, Verndale
 Corwin, G. P., '89, Pomona, Cal.
 *Cotton, Henry, '94, Prescott, Wis.
 B.S., '90, University of Minnesota
 Coulter, Chas. F., '02, Wadena
 Coulter, Herbert, '03, Azusa, Cal.
 Cowles, Danforth C., '01, Minneapolis
 Coyngname, E. F., '87, Borneo, Mont.
 Craig, Russell, '11, Willno Range, Man.
 Crewe, John E., '96, Rochester
 Critchfield, L. R., '09, Steele, N. D.
 B.S., '07, University of Minnesota
 Crommett, Herbert B., '96, Amery, Wis.
 Crossette, Geo. D., '04, Staples
 Cuff, Wm. S., '97, St. Paul
 Culver, Chas. F., '99, Sioux Falls, S. D.
 Cummings, John H., '02, St. Paul
 Current, Earl H., '07, Spokane, Wash.
 Cutts, George, '07, Minneapolis
 Cutts, Geo. A. C., '00, Grove City
 *Cutts, Rollin E., '93, Forest City
 B.S., '90, University of Minnesota
 Cutts, Mrs. R. E., (Smith, '91), Yankton,
 S. D.
 Dahleen, Henry E., '08, Coeur d'Alene,
 Idaho
 Dahlquist, Gustav W., '93, Lancaster
 *Dahlstedt, Nils G., '89, Port Wing,
 Wis.
 Danner, Edgar W., '95, New York City
 Darling, Walter H., '95, Hudson, Wis.
 Darms, Harry L., '92, Hector
 Dart, Leslie O., '01, Minneapolis
 Daugherty, Edwin B., '04, Pine City
 Daugherty, Louis E., '04, St. Paul

*Deceased.

- Davidson, James, '92, Salt Lake City, Utah
- Davis, Frank W., '03, Kasson
- Davis, Frederick U., '02, Faribault
B.S., '98, University of Minnesota
- Davis, Luther A., '01, Dalton
- Dawson, Albert M., '05, Dietz, Wyo.
- Day, Floyd McA., '01, Eugene, Ore.
- Dean, Frank W., '90, Council Bluffs, Ia.
- *Dean, Sidney W., '00, Minneapolis
- Dedolph, Karl, '11, St. Paul
B.S., '12, University of Minnesota
- Dedolph, Theodore, '12, Milaca
- Delmore, John Leo, '09, Roseau
B.S., '07, University of Minnesota
- Dennis, Warren A., '96, St. Paul
B.L., University of Wisconsin
- Deslauriers, A. A., '03, Duluth
- Devine, John L., '04, Lansford, N. D.
- Dickman, Lester A., '01, Lismore
- Dickson, Thomas H., Jr., '10, St. Paul
B.A., Macalester College
- Dittman, George C., '04, S. St. Paul
- Dix, George E., '04, Marshfield, Ore.
- Dodge, Albert A., '94, Great Falls, Mont.
B.S., '91, University of Minnesota
- Dodge, Warren M., '93, Farmington
B.S., '90, University of Minnesota
- Dohm, Chas. L., '96, St. Paul
- Donovan, John Jos., '01, Eden Valley
- Doolittle, Leroy E., '09, Newberg, Ore.
B.A., '05, University of Minnesota
- Douglass, Jesse E., '12, Blue Earth
B.S., '10, University of Minnesota
- Doyle, John W., '01, Minneapolis
- Drake, Charles B., '12, St. Paul
B.A., '08, Yale
- Drake, Charles R., '09, St. Paul
- Drake, Frederick A., '96, Lanesboro
- Drechsler, Herman A., '02, St. Paul
- Drew, George F., '00, Devils Lake, N. D.
- Dugan, Rollo C., '90, Eyota
- Dunn, John T., '04, Albert Lea
- Durand, Jay I., '05, Atlantic City, N. J.
B.A., '02, University of Minnesota
- Dutton, Charles E., '89, Minneapolis
- Dyar, Burt A., '05, De Smet, S. D.
- Earl, George A., '09, St. Paul
B.A., '06, University of Minnesota
- Earl, Robert O., '96, St. Paul
- Eberlein, Edward A., '01, Glenwood
- Eby, Cyrus B., '93, Spring Valley
- Eby, John R., '93, Elko, Nevada
- Edgerton, Wm. M., '96, Faulkton, S. D.
- *Edholm, Edward A., '89, Minneapolis
- Edlen, Emil A., '92, Hayes, S. D.
- Edsall, Jos. L., '92, Bradley, S. D.
- Edward, George, '97, Midland, S. D.
- Egan, John M., '07, Minneapolis
- EGge, Thron S., '93, Moorhead
- Eisengraeber, Gustav A., '01, Granite Falls
- Eisengraeber, Gustav A., '12, Granite Falls
- Eklund, Elmer J., '07, Young America
- Ellis, Benj. Jas., '00, Latah, Wash.
*Ellis, Burton K., '03, Greeley, Colo.
- Ely, Orriman S., '06, Wallace, S. D.
- Emanuel, Henry J., '07, El Paso, Texas
- Emert, Harry F., '12, Lakota, N. D.
B.S., '09, University of Minnesota
- Emmerson, William S., '04, Mayer
- Endress, Karl J., '99, St. Paul
- Engstrom, Fred Alonzo, '08, Estherville, Iowa
- Erb, Frederick A., '02, Minneapolis
- Erdmann, Charles A., '93, Minneapolis
- Erickson, John G., '92, Minneapolis
- Esser, John, '08, Perham
- Estrem, Carl O., '07, Madison, S. D.
- Eustermann, George Bysshe, '08, Rochester
- Evans, Owen, '01, Bangor, Wis.
- Ewing, C. Francis, '01, Wheaton
- *Fanset, John J., '96, Milbank, S. D.
- Farmer, John C., '95, McKinley
- Farmer, Sidney S., '01, Minneapolis
- Farrand, Corydon, '93, Oronoco
- Farrish, Robert C., '01, Sherburne
- Ferguson, Jas. Cory, '01, St. Paul
- Ferguson, William J., '99, Minneapolis
- Field, Merton, '02, Minnesota Lake
- Fiksdal, Mads J., '09, Bristol, S. D.
- *Finstad, Gustaf J., '93, Menomonie, Wis.
- Fisher, Otto F., '97, Houston
- Fitzgerald, Don F., '03, Minneapolis
- Fjelde, Hermann O., '95, Abercrombie, N. D.
- Fjelstad, Carl A., '92, Glenwood
- Fligman, Louis H., '01, Helena, Mont.
- Flom, Andrew O., '12, Minneapolis
B.S., '08, St. Olaf's College
- *Ford, Corydon L., '90, Ann Arbor, Mich.
- Forrest, Charles G., '99, Bagley
- Fortier, Edward L., '08, Little Falls
- Foshager, Henry T., '09, St. Paul
B.S., '05, St. Olaf College
- *Foster, Alson James, '01, St. Paul
- Foster, Bainbridge W., '07, Mandan, N. D.
- Poster, Willard C., '02, Sunrise, Wyo.
- Fowler, Paul H., '03, Plain, Wis.
- Franchere, Frederick E., '90, Sioux City, Ia.
- Frasier, George W., '05, Minneapolis
- Freeberg, Harry M., '04, Watertown, S. D.
- Freeman, Charles D., '04, St. Paul

*Deceased.

- Freeman, George H., '05, Willmar
 French, Edwin J., '00, Rosalie, Wash.
 French, Ernest A., '03, Campbell
 French, Leigh H., '94, New Rochelle,
 N. Y.
 Frost, William S., '04, Spokane, Wash.
 B.S., '01, University of Minnesota
 Fullerton, Ellen C., '03, Shanghai, China
 B.S., '00, University of Minnesota
 Fulton, Philip R., '11, St. Paul
 Fulton, Thos. C., '02, White Bear
 Gaard, Rasmus R., '04, Radcliffe, Ia.
 Gaffney, Thomas J., '97, Lakeville
 Gaines, Everett C., '99, Buffalo Lake
 Gallagher, Patrick J., '04, Spokane, Wash.
 Gallup, Glenn D., '04, River Falls, Wis.
 Gans, Edward M., '05, Eveleth
 Garber, Lou M., '93, Jasper
 Gardner, Edwin L., '12, Minneapolis
 B.S., '10, University of Minnesota
 Gardner, Ray, '09, St. Paul
 Garrison, J. Frank, '00, Oldham, S. D.
 Gates, Chester E., '04, Goodhue
 Gates, Joseph A., '95, Kenyon
 Gauger, Edward C., '05, St. Paul
 *Geiger, John, '96, Osceola Mills, Wis.
 Geist, Emil S., '00, Minneapolis
 Geist, Geo. A., '11, St. Paul
 B.S., '09, University of Minnesota
 George, Jas. Woodward, '02, Minneapolis
 B.S., '96, University of Minnesota
 Germo, Chas., '95, Balaton
 Gerrish, William A., '96, Jamestown, N. D.
 Geyerman, Peter T., '99, Worthington
 Gibbon, Luther L., '97, Lowry
 *Gibbs, Thos. C., '91, Lake City
 Giere, Eric O., '92, Madison
 *Gilbertson, Julius C., '91, Minneapolis
 Gilfillan, James S., '97, St. Paul
 Gilkinson, Andrew J., '93, Osakis
 Gillette, Arthur J., '03, St. Paul
 *Glenn, William, '93, Minneapolis
 Glyer, Richard T., '09, Superior, Wis.
 B.A., '07, Carroll College
 Goddard, Nathan A., '97, Sand Point,
 Idaho
 *Godfrey, Harvey B., '02, Minneapolis
 Goehrs, Henry W., '05, Melrose
 Goldsworthy, William, '97, Two Harbors
 Goodman, Minerva, '02, Stockton, Cal.
 *Goodrich, Judd U., '95, St. Paul
 Gowenlock, Harry J., '04, Gardner, N. D.
 *Grafton, Guy A., '99, Hayward, Wis.
 Grangaard, Henry O., '08, Douglas, N. D.
 B.A., Luther College
 Granger, Mrs. G. W., (Booker) '97, Roch-
 ester
 Grant, Mrs. E. R., (True) '94, El Reno,
 Okla.
 Grant, Mrs. Frank (Wyman) '10, Port-
 land, Ore.
 B.A., '00, Carleton
 Gray, Clyde E., '03, Rush City
 Gray, George A., '98, Spokane, Wash.
 B.A., '95, University of Minnesota
 Greaves, Jay J., '09, Glencoe
 Greeley, Liston Q., '96, Duluth
 Green, Eugene K., '03, Minneapolis
 B.A., '95, University of Minnesota
 Green, George H., '06, Reardon, Wash.
 B.S., '99, University of Minnesota
 Greene, Charles Lyman, '90, St. Paul
 Griebenow, Frederick, '09, Minneapolis
 B.A., '06, University of Minnesota
 Griffin, Miriam E., '05, Malate, Manila,
 P. I.
 B.A., '00, University of Minn.
 Griswold, Frank E., '97, Hoffman
 Grout, Samuel E., '99, Bessemer, Ala.
 Guilford, Harry M., '98, Minneapolis
 B.S., '95, University of Minnesota
 Gunn, Frank H., '95, Eau Claire, Wis.
 Gunz, A. N., '04, Center City
 Ph.C., '99, University of Minnesota
 Guthrie, Charles E., '02, Seattle, Wash.
 B.A., '91, University of Minnesota
 Guthrie, John DeMott, '97, Seattle, Wash.
 E.E., '93, University of Minnesota
 Haas, Chas. A., '94, St. Paul
 Hack, Chas. W., '97, Minneapolis
 Hagaman, George K., '03, Anoka
 Hagen, Olaf J., '06, Moorhead
 Haggard, George D., '93, Minneapolis
 Halgren, Harry A., '97, Watertown
 Hall, Charlotte C., '99, St. Paul, (Mrs. J.
 O. Hall)
 Hammerel, Ambrose, '05, Glendive, Mont.
 Hammes, Ernest M., '06, St. Paul
 Haney, Claude L., '06, Duluth
 B.A., '03, University of Minnesota
 *Hanscom, William H., '89, Minneapolis
 Hanson, Marius, '94, Hendrum
 Hanson, Martin O., '01, Owatonna
 Harden, Kate C., '03, Wyoming, (Mrs.
 F. A. Helmuth)
 Hare, Earle R., '00, Minneapolis
 Harrington, Charles D., '95, Minneapolis
 Harrison, Elmer E., '97, West Concord
 Hart, Alfred B., '03, Pequot
 Phm.D., '94, University of Minnesota
 Hart, Milan J., '95, LeRoy
 Hartshorn, Willis E., '98, New Haven,
 Conn.
 B.Ph., Colorado

*Deceased.

Hartzell, Thomas B., '94, Minneapolis
 D.D.S., '93, University of Minnesota
 Haskell, A. Dair, '00, Alexandria
 Haugen, Gilbert, '05, Battle Lake
 Haugseth, Enoch, '02, Twin Valley
 Phm.D., '94, University of Minnesota
 Havelfield, Addie R., '95, Minneapolis
 Hayes, James M., '10, Browns Valley
 B.S., '04, Carleton College
 Hayes, Michael F., '09, Minneapolis
 B.S., '07, University of Minnesota
 Haynes, Frederick E., '99, Minneapolis
 Hazeltine, Harry H., '01, Ashland, Wis.
 Head, George D., '95, Minneapolis
 B.S., '92, University of Minnesota
 Healy, Raymond T., '09, Minneapolis
 Heath, Albert C., '94, St. Paul
 B.A., Dartmouth
 Hebard, Sue, '03, Mondovi, Wis.
 Hedback, Axel E., '97, Minneapolis
 Heidekker, Arne A., '02, St. Paul
 Heinze, Charles F., '96, Clifford, N. D.
 Helland, John W., '05, Maynard
 Helmuth, Mrs. F. A., (Harden) '03, Wyo.
 Hemingway, Ernest E., '08, Seattle, Wash.
 B.A., '98, Ripon; M.A., '03, Ph.D., '04,
 University of Minnesota
 Hendrickson, Hans W., '93, Kansas City,
 Missouri
 Hendrickson, J. F., '05, Fertile
 Hengstler, Howard W., '11, Willmar
 Hennemuth, John L., '90, Waterford, Cal.
 Henry, Anna M., '99, Pattonsburg, Mo.
 Henry, Fannie J., '99, Kansas City, Mo.
 Hensel, Charles N., '08, St. Paul
 Hesselgrave, Sherman S., '94, St. Paul
 Heilscher, Julian A., '91, Mankato
 Heilscher, Mrs. J. A. (Hughes) '96, Man-
 kato
 Higgins, Irving W., '04, Berkeley, Cal.
 Higgins, John H., '03, Minneapolis
 Higgins, John T., '94, Morgan Hill, Cal.
 B.C.E., '90, University of Minnesota
 *Hilbert, Ferdinand, '92, Albany
 Hilbert, Pierre A., '93, Melrose
 Hilger, Andrew W., '05, St. Paul
 Hilger, David D., '05, St. Paul
 Hill, Eleanor J., '02, Minneapolis
 Hirschfield, Adolph, '93, Minneapolis
 Hitchings, William S., '08, Belgrade
 Hoff, Alf., '10, St. Paul
 B.S., '08, University of Minnesota
 Hoff, Peder A., '00, St. Paul
 Hoffman, Walter F., '04, Seattle, Wash.
 Hoffman, William L., '04, Charles City, Ia.
 Hoidale, Andrew D., '04, Tracy
 Hoiland, Angell S., '10, Benson
 B.S., '08, University of Minnesota

Holbrook, John S., '96, Mankato
 Holmes, Walter B., '94, Ada
 B.S., '88, University of Minnesota
 Holst, Claude F., '01, Little Falls
 Holst, John B., '95, Little Falls
 Holte, Halvor, '93, Crookston
 Hopkins, Mary P., '01, White Bear Lake
 Hotvedt, Ingvald M. J., '99, Muskegon,
 Mich.
 Houston, Charles A., '01, Park Rapids
 Hovde, Anders G., '03, Superior, Wis.
 Howard, Seth E., '93, Robbinsdale
 Hubbard, Frederick G., '03, Cayuga, N. D.
 Hubert, R. Ignatius, '98, St. Cloud
 Hughes, Helen, (Hielscher) '96, Mankato
 *Huhn, Carl, '98, Minneapolis
 B.A., '95, University of Minnesota
 (M.D. post ob.)
 *Humiston, Ray, '03, Worthington
 *Hutchinson, Henry J., '04, Lynn, Mass.
 Huxley, Fred R., '00, Faribault
 Hyde, Mrs. W. G., (Merrill) '96, Milcs
 City, Mont.
 Hynes, John E., '04, Minneapolis
 Ph.C., '00, University of Minnesota
 Hyslin, Evan, '00, Kindred, N. D.
 Ilstrup, Francis, '94, Grasston
 Ilstrup, Orlando, '99, Cokato
 Irish, Palmer H., '00, Walker
 Irvine, Harry G., '03, Minneapolis
 Ivers, Martin U., '02, Abercrombie, N. D.
 Iverson, Lewis U., '97, Christine, N. D.
 Jacobs, Johannes C., '05, Willmar
 Jacobson, Leonard H., '05, Seattle, Wash.
 *James, Ralph C., '05, Mankato
 Janson, Eiliv, '92, Seattle, Wash.
 Janson, Ivar, '92, Seattle, Wash.
 Jennings, George, '07, Missoula, Mont.
 Jennison, John E., '94, DeLamar, Nev.
 Jensen, James C., '03, Hendricks
 Jenson, Charles A., '02, Searchlight, Nev.
 Jenson, Jens Marius, '02, Minneapolis
 Jewell, Emory L., '03, Shoshone, Wyo.
 Johnson, Anders E., '03, Madison
 Johnson, Andrew E., '91, Cloquet
 Johnson, Asa M., '96, St. Paul
 Johnson, Carl M., '10, Montevideo
 Johnson, Edwin M., '98, Albuquerque,
 N. M.
 B.L., '95, University of Minnesota
 Johnson, Hans, '04, Kerkhoven
 Johnson, Herman M., '01, Dawson
 Johnson, Nimrod A., '05, Minneapolis
 Johnson, Oscar V., '05, Sebeka
 B.A., '02, University of Minnesota
 Johnson, Selmer M., '09, New Richland
 Johnston, Edward James, '08, St. Cloud
 Johnston, William W., '02, Janesville

*Deceased.

- *Jones, Chas. H., '90, Temple, Ariz.
 Jones, Elmer M., '07, St. Paul
 Jones, Herbert W., '01, Minneapolis
 Judd, Edward S., '02, Rochester
 Judson, William E., '07, West Duluth
 Juliar, Richard O., '03, Mountain Lake
 Julien, Albert Edward, '10, Braham
 B.A., '03, Hamline University
 Justice, Oswald M., '97, Los Angeles, Cal.
 Kaess, Andrew J., '03, Fargo, N. D.
 Kane, Jos. P., '05, Delano
 Kankel, Otto Wm., '00, Upland, Cal.
 Karn, Bert R., '07, Ortonville
 Kearney, Percy F., '04, Glen Ulin, N. D.
 Keene, Ralph K., '97, Spokane, Wash.
 Kellogg, Paul M., '09, Fargo, N. D.
 Kelly, Paul H., '11, St. Paul
 Ph.C., '04, University of Minnesota
 *Kelly, S. M., '05, Canby
 Kelly, Thomas C., '04, Mankato
 Kelsey, Carleton G., '07, Hinckley, Minn.
 B.A., '04, University of Minnesota
 Kennedy, Jane F., '00, Minneapolis
 Kibbe, Orel A., '05, Hampton, Ia.
 Kiefer, Michael A., '04, Sleepy Eye
 B.S., '01, University of Minnesota
 Kiehle, F. A., '01, Portland, Ore.
 B.A., '94, University of Minnesota
 Kirk, Geo. C., '96, East Grand Forks
 Kirkwood, Samuel M., '92, St. Paul
 Kirsch, Ralph Louis, '12, Crookston
 B.S., '10, University of Minnesota
 Kistler, Chas. M., '93, Minneapolis
 Kittleson, Olaf L., '12, Badger
 B.S., '10, University of Minnesota
 Kittelson, Theo., '02, Fergus Falls
 Kjelland, Andrew A., '10, Rushford
 *Kjos, Knute A., '89, Minneapolis
 Klein, Harry, '12, Duluth
 B.S., '10, University of Minnesota
 Klein, Henry N., '05, Hebron, N. D.
 *Klemer, Carl A., '04, Faribault
 Klove, Lewis, '03, Minneapolis
 B.L., '99, University of Minnesota
 Knauff, Muhlenberg K. '95, Two Har-
 bors
 Knight, Ralph T., '12, Minneapolis
 B.A., '08, University of Minnesota
 Knight, Ray R., '06, Minneapolis
 B.A., '03, University of Minnesota
 Koch, John C., '02, Blackduck
 *Koch, John C. T., '93, Minneapolis
 Kohler, Christian H., '98, Minneapolis
 Koivupalo, Edward H., '95, Laurium,
 Mich.
 Koren, Finn, '01, Madison
 B.A., '98, University of Minnesota
 Kranz, Martin, '05, Mandan, N. D.
- Kremer, Walter John, '11, Cold Springs
 Krueger, Louis W., '96, Mapleton
 Kuhlmann, August, '05, Melrose
 Kurz, John W., '09, Clearwater
 Kuth, Joseph R., '04, Duluth
 Labbitt, LaRoy H., '07, Enderlin, N. D.
 Lamb, H. L., '02, Sauk Center
 Landen, F. G., '94, Stillwater
 Larkin, Chandler C., '11, Huron, S. D.
 La Rose, V. G., '01, Mandan, N. D.
 Larsen, Anders D., '93, Herman
 Larsen, Martin, '09, St. Paul
 B.S., '07, University of Minnesota
 Larsen, Oscar O., '07, Zumbrota
 A.B.
 *Larson, Frank E., '02, Winthrop
 Law, Arthur Ayer, '94, Minneapolis
 Lawler, Frank J., '12, Minneapolis
 Lawrence, Edward J., '08, Spokane, Wash.
 Leavitt, Frederick, '94, St. Paul
 Lee, Wm. P., '94, Northfield
 Lees, R. B., '01, White, S. D.
 Leitch, Archibald, '11, Minneapolis
 Lemstrom, Jarl F., '07, Minneapolis
 Lenfest, J. W., '03, Ambrose, N. D.
 Lenont, Chas. B., '99, Virginia
 Le Vasseur, Irma R., '00, Quebec, Can.
 *Levinson, Archibald E., '01, Minneapolis
 Lewis, Wm. W., '02, St. Paul
 Liedloff, Adolph G., '02, Mankato
 Liland, Ragnvald, '95, Kenyon
 Limburg, Albert, '03, Bowbells, N. D.
 Lind, Alfred, '91, Minneapolis
 B.S., '89, University of Minnesota
 Lindberg, Arvid C., '08, Finlayson
 Lindstrom, Josephine, (Mrs. R. W. Stickel-
 berger), '03, Oberon, N. D.
 *Linjer, Ole E., '89, Minneapolis
 Linneman, Nicholas L., '02, Duluth
 Linner, H. P., '09, Minneapolis
 B.A., '02, Gustavus Adolphus College
 Linton, Laura A., '00, Rochester
 B.S., '99, University of Minnesota
 Litzenberg, Jennings C., '99, Minneapolis
 B.S., '94, University of Minnesota
 Loberg, Adolph E., '01, Minneapolis
 Loe, A. O., '97, Seattle, Wash.
 Lohrbauer, Ejner, '02, Lakota, N. D.
 Lommen, Andreas P., '95, Lanesboro
 Long, Will H., '12, Elysian
 Loomis, Earl A., '07, Somers, Mont.
 B.A., '04, University of Minnesota
 Ludemann, A. H., '06, St. Michaels
 Ludtke, Gustav H., '99, Fairmont
 Lund, Axel L. B., '06, Dawson
 Lundmark, Lambert, '04, Ladysmith, Wis.
 Lyman, Fred V., '03, Thompson, N. D.
 Lynde, Roy, '05, Ellendale, N. D.

*Deceased.

- Lyng, John, '90, Fergus Falls
 Lysne, Henry, '10, Minneapolis
 B.S., '06, St. Olaf's College
 McCarthy, W. F., '89, Maple Lake
 McCloud, C. Naumann, '01, St. Paul
 Phm.G., '95, University of Minnesota
 McCloud, Mrs. J. H., (Conant) '91,
 Hardwick, Vermont
 McClung, Alberta V., '97, St. Paul
 McCreery, Chas. R., '02, Tacoma, Wash.
 McCreery, W. B., '02, Tacoma, Wash.
 MacDonald, Irving C., '02, Minneapolis
 McDonell, Wm. N., '03, Washington,
 D. C.
 McEwan, Samuel W., '10, Washington,
 D. C.
 McGroarty, John J., '07, Easton
 McGuigan, Henry Thomas, '01, Red Wing
 McIntyre, Philip H., '09, St. Paul
 McKibben, H. E., '04, Hector
 McKinnon, J. J., '93, Wadena
 McLaughlin, Ernest W., '96, Willmar
 McLaughlin, J. E., '06, Winchester, Idaho
 McMahan, Chas. G., '06, Copper Hill,
 Tenn.
 McMillan, Mary A., '07, Spokane, Wash.
 McNeerthney, J. B., '99, Tacoma, Wash.
 Mackel, Bertha K., '99, Ada
 Maertz, Will Francis, '08, Lidgerwood,
 N. D.
 Magnusson, Gustav A., '08, Harris, Minn.
 B.A., University of New Mexico
 Magnusson, Herman V., '03, Battle Lake
 Makinson, H. A., '03, Oakland, Cal.
 Maland, Clarence, '07, Minneapolis
 B.A., '04, University of Minnesota
 Maloney, Thos. J., '01, St. Paul
 Manley, James R., '08, Niagara, N. D.
 Manson, F. M., '99, Worthington
 B.S., '94, University of Minnesota
 Marshall, Nelson H., '92, Chaska
 Martin, Thomas R., '07, Duluth
 B.A., '04, University of Minnesota
 *Maschger, Albert P., '05, St. Paul
 Mathiesen, George B., '01, Evansville
 Matthews, Justus A., '05, Rochester
 Matthieu, A. L., '05, South Bend, Wash.
 Mattson, John A., '04, Carver
 Maurer, Edward L., '04, Brownton
 Maxeiner, Stanley R., '09, Minneapolis
 Mayer, L. P., '00, Hudson, Wis.
 Mayland, Louis L., '96, Ryder, N. D.
 Mayland, Martin L., '92, Faribault
 Meckstroth, Chas. W., '95, Brandon
 Meckstroth, Louis W., '93, Wahpeton,
 N. D.
 D.D.S., '91, University of Minnesota
 Mee, Patrick H., '03, Gaylord
- Meighen, J. W., '96, Ulen
 Melby, Benedik, '03, Blooming Prairie
 Merrill, James E., '96, Amboy
 Merrill, Rose M., (Mrs. W. G. Hyde,) '96,
 Miles City, Mont.
 Mesker, Geo. H., '96, Olivia
 Metcalf, James N., '06, Monticello
 Meyer, E. L., '05, Minneapolis
 Meyerding, Edward A., '02, St. Paul
 Meyerding, Henry W., '09, St. Paul
 B.S., '07, University of Minnesota
 Michelson, Henry E., '12, Bismarck, N. D.
 B.S., '10, University of Minnesota
 Midford, Gunlauger, '04, Port Townsend,
 Wash.
 Miller, Arthur W., '97, St. Paul
 Miller, H. W., '06, Jamestown, N. D.
 Millet, Josiah L., '02, Seattle, Wash.
 *Millet, Melvin C., '95, Rochester
 Milner, Augustus F., '09, Berlin, Germany
 Miner, Clarence J., '91, Manila, P. I.
 Mitchell, Whiting B., '11, Sumner, Wash.
 Moen, Johannes K., '93, Minneapolis
 Mohn, Frederick V., '92, San Diego, Cal.
 Moir, W. W., '06, Minneapolis
 Moore, Albert H., '97, New Rochelle, N. Y.
 B.S., '95, University of Minnesota
 Moore, Charles Ulysses, '10, Carthage
 B.A., University of Texas
 Moore, George W., '92, Hopkins
 Moren, Edward, '06, Minneapolis
 Morrill, Robert A., '05, Sidney, Mont.
 Mortensen, Nels G., '09, St. Paul
 Movius, Arthur J., '04, Billings, Mont.
 Muir, Edwin S., '94, Winona
 Munns, John F., '03, Seattle, Wash.
 Munro, Alonzo T., '97, Kalispell, Mont.
 Murphy, Ignatius J., '09, Duluth
 B.S., '07, University of Minnesota
 Nelson, Henry S., '93, Minneapolis
 Nelson, Kent, '00, Baltimore, Md.
 Nelson, Louis A., '96, St. Paul
 Nelson, Melvin S., '08, Dawson
 B.S., '06, University of Minnesota
 Nessa, N. J., '05, Chicago, Ill.
 Nevitt, Orme R., '00, Raymond, Wash.
 Newgard, Julius G., '03, Roslyn, Wash.
 Newman, Gustavus A., '95, New Lon
 don
 Nicholson, Daniel A., '97, Seattle, Wash.
 Nicholson, Elmer, '05, Minneapolis
 Nicholson, Joseph, '03, Brainerd
 Nickerson, Bernard S., '03, Mandan, N. D.
 B.S., '99, University of Minnesota
 Nickerson, Margaret L., '04, Minneapolis
 Nickerson, Winfield S., '05, Hoffman
 Nielson, Niels, '06, Denmark
 Ph.C., '02, University of Minnesota

Nordon, Charles G., '10, Brainerd, Minn.

B.S., '08, University of Minnesota

Nordley, Harry R., '12, Minneapolis

*Norred, William A., '02, Chicago

Norton, Harvey G., '00, St. Paul

Noth, Henry W., '03, Minneapolis

Nuzum, Helen B., '95, St. Louis, Mo.

Nyquist, Jacob E., '05, Cloquet

O'Brien, Henry B., '06, Tacoma, Wash.

*O'Connor, Dennis F., '90, Maxbass, N. D.

O'Connor, John V., '95, St. Paul

*O'Connor, Timothy, '90, Annandale

Ohage, Justus, Jr., '10, Rochester

Olander, J. Edwin E., '04, St. Paul

*Old, Herbert W., '03, St. Paul

Olsen, Sterling H., '01, Milaca

Olson, Chas. A., '11, St. Paul

Olson, George, '04, U. S. S. Galveston

Olson, John W., '00, Troy, Idaho

Olson, Olaf, A., '02, Minneapolis

Olson, William P., '09, St. Paul

O'Malley, William P., '02, St. Paul

Oppegard, Manford, '10, New London

B.S., '08, University of Minnesota

Oppliger, Gottlieb, '95, Warroad

Osborn, Anna Lida, '00, Mankato

Ostergren, Edward W., '09, St. Paul

Owen, George B., '00, Butte, Mont.

Oyen, Martin, '09, Ellsworth, Wis.

*Palmquist, John E., '96, Princeton, Ill.

Papez, James W., '11, Mobile, Ala.

Parker, Harvey G., '01, Portland, Ore.

Parker, Owen W., '00, Ely

Parrott, Byron W., '97, Long Prairie

Parsons, George E., '05, Elk River

Parsons, Joseph G., '98, Sioux Falls, S. D.

Passer, Adolph A., '12, Kenyon

B.A., '02, University of Minnesota

Patton, Frederick J., '99, Duluth

Paulsen, Edward L., '09, Minneapolis

B.S., '07, University of Minnesota

Peabody, Percy D., '02, Webster, S. D.

Pearce, Nay O., '05, Chisholm

Pederson, Harold, '07, Twin Valley

Pederson, Reuben M., '06, Minneapolis

Peppard, Thomas A., '12, Minneapolis

B.S., '10, University of Minnesota

Perkins, George A., '97, Dickinson, N. D.

Perry, Clarence G., '09, St. Paul

B.S., '07, University of Minnesota

Perry, Gentz, '97, Amery, Wis.

Peterson, John R., '97, Willmar

Peterson, Olans L., '05, Cokato

Peterson, Victor, '06, Cokato

Pettit, Charles W., '03, Minneapolis

*Pettit, Loretta J., (Mrs. Jas. Baird),

'94, Minneapolis

Phelan, Richard J., '03, Minneapolis

Phillips, George W., '89, Butte, Mont.

Phillips, Wm. H., '94, Jordan

Pineo, William B., '85, Minneapolis

Piper, Monte C., '10, Sanborn

*Pitblado, John D., '96, Minneapolis

Platt, John J., '95, St. Paul

Poehler, Franklin T., '96, Minneapolis

B.S., '93, University of Minnesota

Pollock, Lee W., '12, St. Paul

B.S., '11, University of Minnesota

Poppe, Frederick H., '07, Minneapolis

B.A., '04, University of Minnesota

Porter, Oliver M., '05, Atwater

Ph.C., '02, University of Minnesota

Powell, Charles B., '94, Madison

Pratt, Chelsea C., '06, Mankato

Pratt, Mrs. W. J., (Campbell), '00, Gardner, N. D.

Preine, Irving A., '10, Minneapolis

Preisinger, Joseph W., '04, Renville

Pretlow, Clotilde L., '95, Fairmount, Ind.

Prim, Joseph A., '99, Minneapolis

Prinzing, Jacob, '01, Ontario, Ore.

Putnam, Catherine E., '01, St. Paul

Quain, Eric P., '98, Bismarck, N. D.

Quist, Henry W., '07, Minneapolis

Ramaley, Louis, '05, St. Paul

Ramsey, Walter R., '96, St. Paul

Ramstad, Niles O., '99, Bismarck, N. D.

Rankin, Arthur A., '00, South Haven

Ransom, Edward M., '04, Minot, N. D.

*Ranson, George, '95, Dodge Center

Ranson, Mary E., (Mrs. Frank Strickler)

'98, Sleepy Eye

Read, Harry K., '99, Hibbing

Reed, Chas. A., '98, Minneapolis

B.S., '95, University of Minnesota

Rees, Soren, P., '97, Minneapolis

B.S., '95, University of Minnesota

Regner, J. A., '89, Minneapolis

Reilly, James J., '86, Milton, N. D.

Reimstad, Christian S., '96, Brainerd

*Reimstad, Sven S., '95, Minneapolis

Reiter, Henry W., '93, Shakopee

Reynolds, James S., '05, Minneapolis

Ribble, George B., '04, La Moure, N. D.

B.A., '01, University of Minnesota

Rice, C. P., '06, Breckenridge

Rice, Geo. D., '03, Pipestone

Richards, Henry Raoul, '00, Waterville.

Wash.

Richards, Wm. G., '04, Hardin, Mont.

Richmond, Chas. D., '05, Windom

Ridgway, Alfred M., '90, Annandale

Ringnell, Carl J., '91, Minneapolis

Ringnell, Frank O., '95, Moline, Ill.

Ritchie, Harry P., '96, St. Paul

Ph.B., Yale

*Deceased.

- Roadman, Ira McC., '98, Onamia
 Roan, Carl Martin, '08, Minneapolis
 B.A., Augsburg
 *Robbins, Ray P., '04, Portland, Ore.
 Robertson, A. W., '09, Litchfield
 Robitshek, Emil, '03, Minneapolis
 Rodgers, Charles L., '07, Minneapolis
 Rogers, James L., '05, Newport, Wash.
 Rogers, J. T., '91, St. Paul
 Rose, Frank R., '01, Spokane, Wash.
 Rose, Mrs. C. L. (Turner '95), Spokane, Wash.
 Rosen, Samuel, '04, Minneapolis
 Rosenthal, Ignatius P., '07, Canal Zone, Panama
 Rothnem, Thomas P., '12, Madison
 Rothschild, Harold J., '05, St. Paul
 Rothwell, William P., '92, Pawtucket, R. I.
 Rousseau, Victor, '05, Maple Lake
 Rowe, Olin W., '03, Duluth
 Rudell, Gustaf L., '06, Plaza, N. D.
 B.A., '03, University of Minnesota
 *Rulien, Frank W., '97, Joliet, Ill.
 Rumreich, Erhard A., '11, Pisek, N. D.
 Russell, Clarence W., '03, Denver, Colo.
 Ruud, Magnus B., '11, Alexandria
 B.A., University of North Dakota
 Ryan, Dennis E., '08, Shakopee
 B.A., St. Thomas College
 Ryley, Marie J., '95, Minneapolis
 Sanborn, Courtland R., '07, Alexandria
 Sanford, James A., '01, Farmington
 Satersmoen, Theodore, '10, Pelican Rapids
 Savage, Francis J., '01, St. Paul
 Sawyer, Herbert P., '95, Goodhue
 Scace, Lee A., '07, Centralia, Wash.
 *Schacht, Fred E., '03, Seattle, Wash.
 Schaleben, Henry O., '03, Lake Benton
 Schmidt, Henry A., '09, Westbrook
 Schmidt, Walter R., '03, Chisholm
 Schneider, Edwin H., '10, Rochester
 Schneider, Henry A., '01, Jordan
 Schneider, John P., '06, Greene Isle
 Schoonmaker, Edward P., '99, Mercedes, Texas
 Schuldt, Fred C., '03, St. Paul
 Schulze, Albert G., '04, Duluth
 Schutt, John P., '06, Bremerton, Wash.
 Seaberg, Simon P., '06, Spokane, Wash.
 Seashore, David E., '02, Duluth
 Seashore, Gilbert, '02, Minneapolis
 Scham, Max, '10, Minneapolis
 Seifert, Otto J., '12, New Ulm
 B.S., '10, University of Minnesota
 Senkler, George E., '92, St. Paul
 Serkland, John C., '00, Rothsay
 *Setnan, John M., '99
 Sewall, Ralph J., '95, Crosby
 Shaleen, Arthur W., '02, Hallock
 Shaw, Albert Wm., '99, Buhl
 Shellman, John L., '03, Nashwauk
 Sheppard, Fred, '95, Hutchinson
 Sheppard, Prosper E., '91, Hutchinson
 Sherwood, George E., '94, Kimball
 Siemens, Abram, '90, Mountain Lake
 Simons, Jalmar H., '10, Waseca
 B.S., '08, University of Minnesota
 Simpson, James Kidd, '84, Juneau, Alaska
 Slippert, Halfdan, '95, Fosston
 Smith, Arthur E., '05, Minneapolis
 Smith, Clarke S., '08, Kalispell, Mont
 Smith, Ernest V., '07, Rochester
 Smith, Frank Dale, '05, Stratford, S. D.
 Smith, Fred L., '06, Chatfield
 B.A., '03, University of Minnesota
 Smith, Hiram W., '97, Crookston
 Smith, Leon G., '10, Montevideo
 Smith, Martha J. (Mrs. R. E. Cutts), '91, Yankton, S. D.
 Smith, Margaret Isabel, '06, Freeport, Ill.
 Smith, Oscar Mendelson, '09, Tacoma, Wash.
 B.A., '05, University of Minnesota
 *Smith, William S., '92, Waseca
 Snyder, George W., '12, St. Paul
 B.S., '10, University of Minnesota
 Soderlind, Andrew, '90, Minneapolis
 Sogge, Louis, '05, Jackson
 Soper, John E., '96, Norwood
 *Sorenson, Anthony N., '99, Minneapolis
 *Sorg, John A., '96, Hastings
 Sorkness, P. R., '95, Fargo, N. D.
 Souba, Frederick J., '10, Hopkins
 B.S., '08, University of Minnesota
 South, J. R., '89, Ouray, Colo.
 Spear, Albert E., '11, Belfield, N. D.
 Ph.B., '05, Hamline University
 Speier, Hugo, '84, Minneapolis
 Spottswood, Edward W., '93, Missoula, Mont.
 Stack, George F., '96, Independence, Wis.
 B.A., '93, University of Minnesota
 Stahl, Harriet S., '97, Harmony
 Staley, John C., '03, St. Paul
 *Stebbins, Albert M., '94, Glenwood
 Stebbins, Eugene B., '08, Hurley, Wis.
 *Steel, Edwin D., '89, Mankato
 Stemsrud, Arne A., '01, Dawson
 Stephan, Ernest L., '93, Hinckley
 Stephenson, John L., '95, Monango, N. D.
 Sterner, Otto, '03, Cambridge
 Stevens, Charles S., '07, Farmington
 B.A., '04, University of Minnesota
 Steveas, John, Jr., '97, Belfast, Me.

- Stewart, Allen B., '91, Owatonna
 Stewart, Elsie G., '09, Minneapolis
 Stewart, Malcolm A., '02, Omamee, N. D.
 Stierle, Adolph, '01, St. Paul
 Ph.G., New York
 Stimpson, Edward W., '03, Roslyn, Wash.
 Stockman, Bert G., '96, Woodville, Wis.
 Stolpestad, Harold L., '01, St. Paul
 Stowell, Joab, Jr., '90, North Amherst, Mass.
 * Strachauer, Arthur C., '08, Minneapolis
 Strang, David M., '07, Northfield
 Strathern, Fred P., '99, St. Peter
 B.S., '94, University of Minnesota
 Strathern, Moses Lane, '07, Coleraine
 B.A., '04, University of Minnesota
 Stricklebergers, Mrs. R. W., (Lindstrom),
 '03, Oberon, N. D.
 Strout, George E., '01, Winthrop
 Stuhr, Henry C., '00, Minneapolis
 Sundt, Mathias, '09, Hanska
 B.A., '06, University of Minnesota
 Sutton, Charles S., '09, Minneapolis
 B.A., '06, University of Minnesota
 Swanson, Cephas, '07, St. Hilaire
 B.A., Gustavus Adolphus College
 *Swartz, West J., '00, Forest Lake
 Sweitzer, Samuel E., '01, Minneapolis
 Swenson, George B., '00, Baldwin, Wis.
 Taylor, Wm. W., '00, Kalispell, Mont.
 Tebbitt, R. L., '04, Laramie, Wyo.
 Teisberg, Carl B., '06, Pine City
 Tennant, Russell W., '99, Spokane, Wash.
 Tenney, Jacob S., '95, Alma, Wis.
 Tennyson, Falk, '93, Minneapolis
 Thabes, John A., '96, Brainerd
 Thelen, Wm. P., '02, Wilton, N. D.
 Thomas, George E., '04, Minneapolis
 B.L., '01, University of Minnesota
 Thompson, Albert, '05, St. James
 Thompson, Victor C., '12, Preston
 Thomson, Arthur M., '04, South Park, Wash.
 Thoraldsen, Torfin, '02, Cottonwood
 Thorpe, Arthur C., '97, Los Angeles, Cal.
 Thrane, Marcus, '94, Madison
 Thyng, Date K., '96, Willow City, N. D.
 Tilderquist, David L., '03, Duluth
 Tirrell, John M., '00, Portal, N. D.
 B.A., '97, University of Minnesota
 Titus, William S., '04, Mora
 Todd, Frank C., '92, Minneapolis
 D.D.S., '91, University of Minnesota
 Todd, Gilbert D., '03, Medina, N. D.
 Towers, Mary E., (Mrs. F. E. Towers),
 '98, Minneapolis
 Tripp, George A., '99, South Bend, Wash.
 Trowbridge, E. H., '09, St. Joseph, Mo.
 True, Augusta Isabella, (Mrs. E. R. Grant) '94, El Reno, Okla.
 Truscott, Joseph R., '01, Binford, N. D.
 Trutna, Thomas J., '05, Silver Lake
 Tuohy, Edward L., '05, Duluth
 B.A., '02, University of Minnesota
 Tupper, Eugene L., '97, Ottawa, Ohio
 Turnacliff, Dale D., '11, Osakis
 *Turner, Arthur L., '94, Faribault
 Turner, Mrs. Frances E., (Mrs. C. L. Rose) '95, Spokane, Wash.
 Tyler, Frank A., '06, Molson, Wash.
 Tyrrell, Clinton C., '06, Minneapolis
 Valentine, Walter H., '00, Tracy
 Valley, Rose V., '01, Minneapolis
 Van Damme, Wm. C., '86, Minneapolis
 *Van Slyke, Charles A., '91, St. Paul
 Van Valkenburg, B. F., '93, Long Prairie
 Varco, Albert R., '07, Miles City, Mont.
 B.A., '04, University of Minnesota
 Verne, Victor E., '06, Parkers Prairie
 Vigen, Jorgen G., '94, Fergus Falls
 Vinje, Syver, '02, Henning
 Vistaunet, Peder S., '06, Shelly
 Vistaunet, Peter L., '02, Thief River Falls
 Voges, Adolph, '04, Hanover
 Wagar, Wm. D., '98, Michigan City, N. D.
 Walker, George H., '08, Fairfax
 B.S., University of Nebraska
 Walker, James D., '09, Wykoff
 B.A., University of North Dakota
 Walker, John Frank, '08, Bison, S. D.
 Wallace, Charles J., '04, Chippewa Falls, Wis.
 Walter, Guy F., '06, Minneapolis
 *Walters, Eugene, '95, Bakewell, Eng.
 Wangelin, Hugo E., '91, Belleville, Ill.
 Wanous, Ernest Z., '97, Minneapolis
 Ward, Austin, '00, Boulder, Mont.
 Warner, Eugene F., '04, Duluth
 H. '02, University of Minnesota
 Warner, Ohmer H., '12, Freeport
 Warren, Frank S., '96, Faribault
 Watkins, Frank A., '89, Wilkesbarre, Pa.
 Watson, Earl M., '10, Crawfordsville, Ind.
 B.A., '03, Wabash College
 Watson, Thomas R., '95, Clarissa
 Watson, Tolbert, '08, Albany
 B.A., Macalester
 Webster, Albert M., '04, Portland, Ore.
 B.A., '91, University of Minnesota
 Weed, Frank E., '12, Conway, N. D.
 Weishaar, Charles, '05, Britton, S. D.
 Welles, H. Journeay, '01, Minneapolis
 Wells, Horace R., '98, North Yakima, Wash.

*Deceased.

Westeen, Anders A., '92, Grand Forks,
N. D.
Wethall, Anton G., '03, Minneapolis
Weyrens, Joseph P., '07, Taylor, N. D.
B.S., '05, University of Minnesota
Weyrens, Peter J., '00, Red Wing
*Wheeler, Frederick L., '04, Minneapolis
B.S., '01, University of Minnesota
Wheeler, Merritt W., '10, Glencoe.
B.A., M.S., University of Iowa
Wheelon, Frank E., '00, Minot, N. D.
Whipple, Clarence D., '03, Minneapolis
Whitacre, John C., '01, St. Paul
White, James B., '91, Montgomery
Whittier, Raymond W., '12, Minneapolis
B.S., '11, University of Minnesota
Wiger, Nicholas N., '03, Seattle, Wash.
Wiik, Johan C., '07, Moscow, Idaho
Wilcox, M. Russell, '97, Minneapolis
Wilcox, Van H., '02, Minneapolis
Wilkinson, Stella L., '03, Duluth
Will, Wm. W., '05, Bertha
Williams, Archie E., '00, Havre, Mont.
B.A., '94, University of Minnesota
Williams, Stephen E., '04, Chippewa Falls,
Wis.
Williams, Ulysses G., '89, Minneapolis

Willson, Hugh S., '04, Crystal, N. D.
Wilson, Louis B., '96, Rochester
Wilson, Paul W., '12, Whittier, Cal.
B.S., '06, Wesleyan University
Winberg, Osten K., '92, Lake Park
Wiseman, Robert L., '97, Pine City
Witham, Carl A., '06, Minneapolis
Wolner, Oscar H., '02, Hanover
Phm.D., '98, University of Minnesota
Woods, Ernest A., '99, Clear Lake
Workman, Warner G., '12, Tracy
Wright, Charles O., '90, Luverne
Wright, Franklin R., '94, Minneapolis
D.D.S., '90, University of Minnesota
Wunder, Henry E., '92, Proctor Knott
Wylie, Arthur R. T., '06, Grafton, N. D.
Wyman, Kate, '10, Portland, Ore. (Mrs
Frank Grant)
B.A., '00, Carleton College
Yoerg, Otto W., '10, Winthrop
Yoseph, Yoseph D., '94, Minneapolis
Youngs, Alfred H., '07, Pierre, S. D.
Zander, Chas. H., '09, St. Paul
Ph.C., '02, University of Minnesota
Zimmerman, James, '12, Neche, N. D.
B.A., Wabash College
Ziskin, Thomas, '11, Minneapolis

*Deceased.

HAMLIN UNIVERSITY GRADUATES

These students were taught in the Medical School, University of Minnesota, and graduated by Hamline University, College of Physicians and Surgeons, in accordance with agreement of 1908.

GRADUATES OF 1908-9

Dickey, Robert Randolph, Minneapolis	McCarty, Edison Orin, Minneapolis
Evarts, Miss Arrah B., Mantorville	MacDonald, Daniel A., Wabasha
Gelz, John James, Minneapolis	Schnache, Roy Alvin, St. Paul
Ghostley, Fred J., Minneapolis	Sewell, George Melville, Minneapolis
Ghostley, Mary C., Minneapolis	Skemp, Frank Scofield, Minneapolis
Gilkey, Seth E., Minneapolis	Thornby, Hallward J., Dawson
Haverstock, Arthur David, Minneapolis	Trenkle, Henry Landalynn, Minneapolis
Kaufhold, George F., St. Paul	Vadheim, Alfred Lyman, Garrison, S. D.
Lommen, Clarence Edgar, Buxton, N. D.	Van Deboget, Lewis, Minneapolis

GRADUATES OF 1909-10

Clay, Frank H., Minneapolis	Love, George R., Preston
Petit, Leon J., Minneapolis	

GRADUATES OF 1910-11

Dailey, William J., St. Paul	Laurent, Antoine A., Minneapolis
Goodheart, Charles J., Fargo, N. D.	Schumacher, Nicholas W., Minneapolis
Hedenstrom, Louis H., St. Paul	Wooster, Arthur M., Minneapolis

